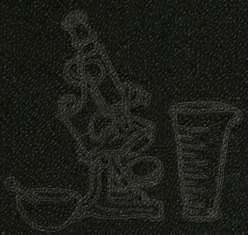
THE SCIENCE of FOOD and COOKERY



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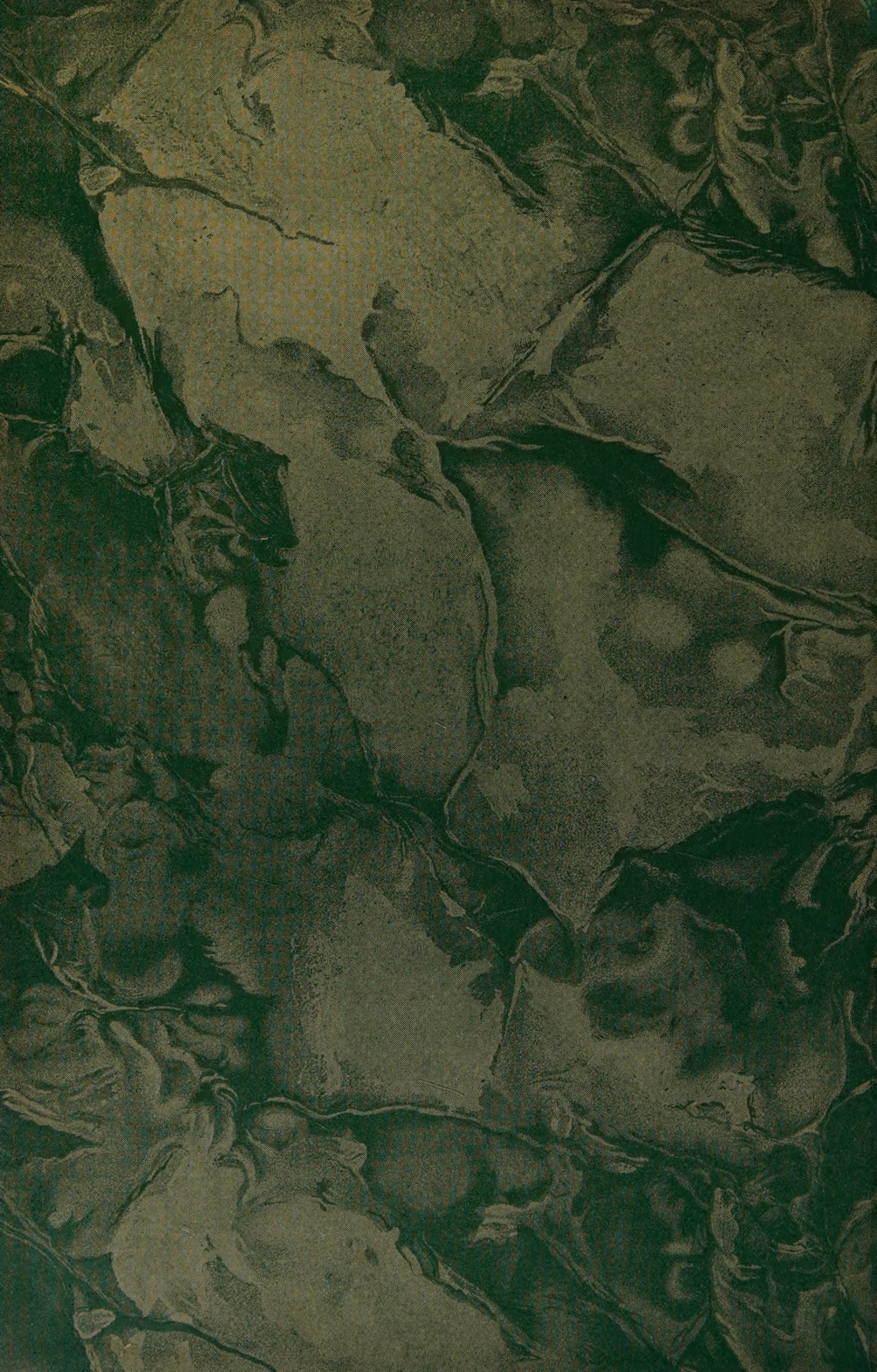
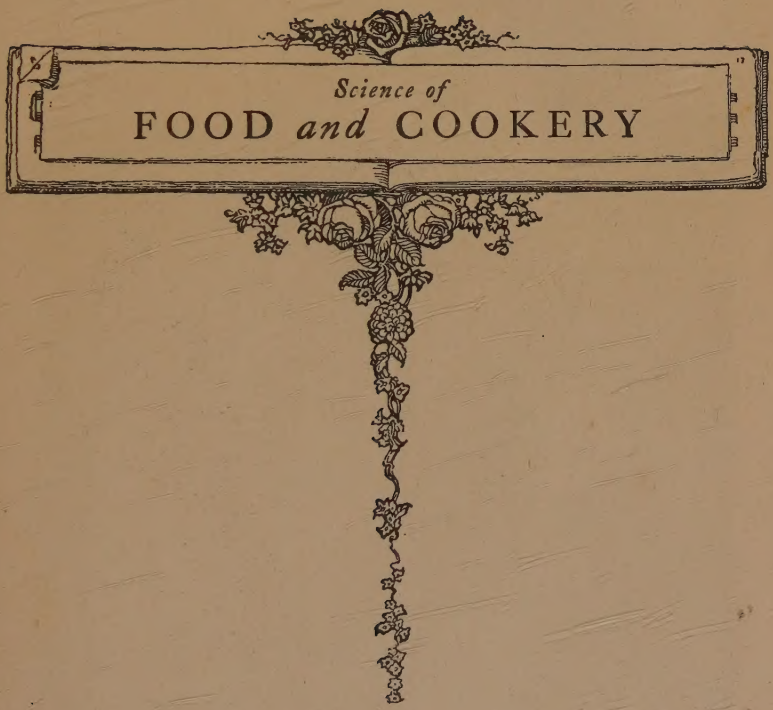


SCIENCE BOOK



From painting by A. Hagborg

OCTOBER POTATOES

Science of

Food & Cookery

BY

H. S. ANDERSON

DIETITIAN

Loma Linda Sanitarium

California

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PUBLISHERS' PREFACE

In presenting "Science of Food and Cookery" to the public, we do not add another cookbook to the many now in the hands of the perplexed housewives of America. This is the fifth and enlarged edition of a little work which has already made its way; and for this edition, hundreds of orders are already filed.

There is a demand for the book from those who know the first editions. There is a moral demand for the information it contains, in these days of world food scarcity and the need of wise food conservation, when the best food for the least money is called for.

The recipes are not prepared by a tyro, nor gathered from miscellaneous collections, nor compounded merely to please the taste.

The author has had a score of years of experience in every stage of cooking science and practical work, from mere helper to the chef. He has served for years under German and Swiss and Spanish and English and French chefs. For a year, he was second cook in the Calumet Club of Chicago, where he served European royalty; and for nearly the same length of time, in the California Club of Los Angeles; and he has also served in like capacity in many leading hotels in various cities.

For the last twelve years, Mr. Anderson has given himself to the better side of the question,—healthful, palatable, scientific, economical cookery.

These recipes are all tested and tried, and retested and retried in connection with experienced chemical, medical, practical collaborators, in the Medical Missionary College and Sanitarium of Loma Linda, California, in which Mr. Anderson is food expert.

The present edition, having been got out in the blazing light of twentieth century discoveries, and giving special attention to the solving of the ever present problem of high cost of living, should occupy a unique place among books of its kind, being not merely a vegetarian cookbook, but a treatise on foods and nutrition as well; and as such we send it forth on its mission of health.

Preface to Fifth Edition

So many newly discovered facts have been added to our knowledge of foods and nutrition since the beginning of the great war, that it has seemed best, in order to bring the subject matter up to date and to produce a volume that will prove to be of greater benefit to the general public, to make some rather extensive alterations in and additions to "Food and Cookery."

That the object of the book may be more fully set forth, the following from the preface of the preceding edition is embodied in this:

"The book is not a treatise on vegetarianism, although it advocates the total disuse of the flesh of animals as food, and a more extensive use of grains, fruits, nuts, and other products of the vegetable kingdom, thus propagating a principle that tends essentially to true civilization, to universal humaneness, and to health and happiness generally.

"The history of vegetarianism is as old as human history itself; and probably in every age, there have been some who have practiced it either as a religious duty, or under the belief that they would thereby conserve the life forces, and be the better fitted for the pursuit of peace and happiness. Again, there are those who adopt a vegetarian course of diet in the belief that many diseases, such as gout, and gastrointestinal disorders, would largely disappear if the vegetarian diet were strictly adhered to. Another motive for adopting vegetarianism is undoubtedly economy. To a great extent, the human race is virtually vegetarian from necessity. Nor do we find that feebleness, either of mind or of body, necessarily ensues. Rather, experience shows the opposite to be the case.

"It has been the purpose of this book to make the instruction and recipes so practical that the many who are desirous of reforming their diet may do so intelligently. To such, it is well to say that changes in the habits of a lifetime should be gradual and progressive, as the functions of the body do not readily adjust themselves to changes that are too radical. When flesh foods are left off, digestive juices of a different character are required; but it is a matter of only a short time until the system adjusts itself to the change.

"It is certainly true that as one perseveres in a non-flesh diet for a length of time, the relish for spices and condiments diminishes; and as these really serve to blunt the sensitiveness of the palate, there gradually comes into evidence, when they are discarded, a keener discernment of the rarer and more delicate natural flavors, which are quite inappreciable to the taste accustomed to highly seasoned foods. One mistake to be avoided, however, is the opposite extreme. Food should never be served savorless and insipid. As one has expressed it, 'When the goodman comes in expecting the usual roast mutton or kidney stew, do not set before him a dish of mushy barley or sodden beans.' There is at command a variety of vegetarian dishes, practically unlimited, and savory enough to tempt the most fastidious.

"The most common error of those who have eschewed flesh products is that, having developed the taste for natural foods, they are inclined to overeat. Many labor under the delusion that because they have discontinued the use of the more harmful articles of diet, they are licensed to eat all their appetite calls for. Soon they observe symptoms of intestinal indigestion, and attribute it to their having adopted the diet reform. The secret of success in avoiding this error is thorough mastication, and the eating of only a few kinds of food at one meal. The benefit derived from food does not depend so much on the quantity eaten as on its thorough digestion and assimilation. Therefore if the time in which to eat is limited, the amount eaten should be proportionately limited."

The various biological studies carried on in both this and other lands during the past few years, have emphasized the extreme value and potency of fresh foods and of ground whole meal cereals and flours, and have demonstrated clearly the deficiency of the modern so-called refined flours and foods. In the light of these experimental discoveries, many of our common diseases are now attributed to the lack of minerals and vitamines, which have been largely eliminated from our foods, leaving them without a due share of those vital qualities which build up the body's resistance to disease. The vitamine theory, therefore, is discussed at length in the body of the text, being traced from its early inception, dating many years back, to its modern exemplification as verified in standard dietetics.

Besides the incorporation of many new recipes in this edition, it has been thought best to expand the chapter "Cookery for the Sick" to include some instruction concerning diet in particular diseases. For this new matter, we are indebted to Dr. Lavina Herzer, teacher of nutrition and cooking in the College of Medical Evangelists, Loma Linda, California. The author also acknowledges his indebtedness to Mrs. Harriet E. Buchheim for her assistance in getting the matter into satisfactory form, and to Mrs. J. J. Weir, associate teacher, for her contribution of recipes.

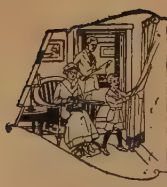
To know that the information contained herein will be the means of helping some others to the "more excellent way" will be reward sufficient for the author.

H. S. Anderson

NOTE

A number of books that are to be recommended for further study are the following:

"Chemistry of Food and Nutrition," by Sherman.
"Newer Knowledge of Nutrition," by McCollum.
"Science of Eating," by McCann.
"How to Live," by Fisher and Fisk.
"Ministry of Healing," by E. G. White.



CONTENTS

FOODS, THEIR USES IN THE BODY 11
Building and Repair Foods 12
Heat and Energy Foods 13
Body-Regulating Substances 15
THE VITAL ELEMENTS IN FOODS (VITAMINES) 16
Fat-Soluble A 19
Water-Soluble B 20
Water-Soluble C 22
Vitamines and Calories 26
FOOD MINERALS ESSENTIAL TO ALL LIFE 29
The Body's Internal Defenses 31
Food Iron 32
Food Calcium 33
Demineralized Food and Constipation 34
White and Entire Wheat Bread 35
NATURAL FOOD OF MAN 37
True Food Satisfies Hunger 38
Vegetarian Diet and Longevity 39
Vegetable and Flesh Foods Contrasted 42
Vegetarian Diet and Endurance 45
Flesh Eating a Cause of Disease 48
Ethics of Flesh Eating 50
Cruelty of Flesh Eating 51
BALANCING THE FOOD 53
Food Values (Chart) 55
FOOD ECONOMICS 57
Comparative Food Values 59
COOKERY AND FOOD PREPARATION 61
Objects Sought in Cooking 61
PRINCIPLES OF SUCCESSFUL COOKERY 67
Practical Hints 69
FOOD COMBINATIONS 72
Good Combinations 73
Poor Combinations 73
Acids and Starches 73

CONTENTS

Fruits and Vegetables 75
Milk and Sugar 76
Free Fats in Cooking 77
Dietetic Errors 79
Hasty Eating 79
Eating Between Meals 80
Large Variety 81
Overeating 82
Drinking at Meals 82
Artificial Stimulants 82
About Tea and Coffee 83
Planning the Meal and Menu Making 85
Table of Food Classification 86
Backbone of the Meal 87
Menus for One Week 88
Table of Food Composition 90
The Third Meal 91
About the Two-Meal Plan 91
Adaptation of Food 93
Course of Cooking Lessons 94
Lesson Outline 94
Essentials to Success 96
Table of Measures 97
Bread 98
The Best Flour 99
Principles of Bread Making 100
Molding the Loaves 101
Proving the Loaves 102
Baking 102
Yeast 103
Liquid Yeast 104
Fermented Bread 105
Unfermented Breads 111
Batter Breads 113
Dough Breads 117
Soups 122
Entrées and Noon-Meal Dishes 132
Gravies and Sauces 157
Vegetables 161

CONTENTS

SALADS AND DRESSINGS 178
Dressings 178
Vegetable Salads 181
Fruit Salads 187
DESSERTS 190
Dried Fruits 191
Puddings and Jellies 192
Pies 202
Cakes and Cookies 207
Icings and Fillings 213
TOASTS, BREAKFAST DISHES, CEREALS, EGGS, SANDWICHES . 216
Toasts 216
Cereals 218
Eggs 221
Sandwiches 223
COOKERY FOR THE SICK 228
Invalid Recipes 230
DIET IN DISEASE 236
The Infectious Diseases 236
Liquid Diet 238
Soft, Semisolid, or Semiliquid Diet 238
Gastric Disorders 238
Intestinal Disorders 241
In Tuberculosis 243
Diabetes Mellitus 243
Nephritis 246
Anæmia (Secondary) 246
Blood-Building Foods 246
FRUIT ICES, ICE CREAM, SHERBETS 247
PRINCIPLES OF CANNING AND PRESERVING 250
Time-Table for Sterilizing 253
Vegetables 253
Preservation in Salt 255
Preservation of Eggs (Water Glass) 255
Fruits 256
Jelly Making 259
MISCELLANEOUS RECIPES 261
WARMED-OVER DISHES 267
WHEAT FLOUR AND SUGAR SUBSTITUTES 268

CONTENTS OF APPENDIX

ACID-FORMING AND BASE-FORMING FOODS 271-286

Acidosis 271

List of Acid-Forming Foods 273

List of Base-Forming Foods 273

Pure Blood and Immunity 274

Food Iron 275

Calcium-Rich Foods in Tuberculosis 277

Calcium Versus Sugar 278

Cancer, a Probable Cause 279

Food-Helps in Serving the Sick 279

Recipes 281

I. FOODS, THEIR USES IN THE BODY

"Eat ye that which is good."

Foods are substances which, when taken into the body, supply the necessary elements for promoting growth, repairing its broken-down tissue, and furnishing it with heat and power for muscular work. True foods contain the same elements as are found in the human body, and thus they are able to build and maintain the body structure.

Nutrition is the sum of those processes by which food material is assimilated and utilized by the body. When food contains the same chemical units as those found in the body, and is taken in normal amounts, the body substance is protected and built up; but it is burned as fuel when the food supply is insufficient. In other words, balanced nutrition means that the income is equal to the outgo.

Natural foods, just as they come from garden, field, and orchard, furnish the elements best suited to the harmonious development and functioning of all the tissues and organs of the body, and when served in as simple and natural a condition as possible, supply material for both the building and the repair of its intricate machinery, endowing it with a disease-resisting vitality that is found in true food only.

For our every need, the Creator has made full and wise provision. He has given us foods suited to every requirement of the

body. These requirements — speaking in a somewhat restricted sense — may be classed under three general heads, to which, in this brief study, we must confine our attention.

1. For Building and Repair Foods
   - *a.* Proteins
   - *b.* Mineral matters
2. For Heat and Energy Foods
   - *a.* Starches
   - *b.* Sugars
   - *c.* Fats
3. For Body-Regulating Substances
   - *a.* Water
   - *b.* Cellulose
   - *c.* Mineral matters
   - *d.* Vitamines

BUILDING AND REPAIR FOODS

The production of heat and the expenditure of vital force necessarily involve the wear and breaking down of tissue. There is never an act, as the movement of a muscle, or a thought of the mind, but wears out many a living cell; and thus it is evident that unless continually repaired, the body machinery could last but a short time. But the One who made the machine, knowing this need, in infinite wisdom, prepared especially for it the particular kinds of food needed for repairing and building purposes. These are known as protein and mineral matters.

Protein is that element in our food which builds new tissues and repairs the worn parts of the body. It is found in milk, especially in the curd (the part utilized in cottage cheese); in the white of egg; in dried peas, beans, and lentils; and in the various nuts, most of which are rich in protein. It is found in lesser quantities in all our common foods except sugar and pure fat; for instance, the gluten of wheat (that part which is gummy when chewed). Wheat gives us, in a loaf of good bread, about ten calories of protein in one hundred calories of food, which is the recognized dietary requirement in normal health.

Mineral Matters are those substances in our food which are used to build up the bones and the teeth, and which enter into the formation of the blood and the tissues; hence they are included

in the building foods. They are found in small quantities in all natural foods, especially in whole grain cereals and fresh fruits and vegetables.

HEAT AND ENERGY FOODS

As our houses are warmed, so also our bodies are maintained at a certain temperature, about 98.4° to 98.6°. In our homes, the fires are kept burning in our furnaces; so in our bodies, heat is generated by a process similar to fire, the fire being essentially the same as any other fire,— the union of the oxygen of the air with the carbon of the fuel. No matter how rapidly or how slowly these elements unite, whether in the furnace, or in the body, or in the decaying log, heat is given off.

In the body, food is the fuel that furnishes the carbon, and the breath is the air that furnishes the oxygen. The union of carbon and oxygen does not take place in the stomach or in the lungs, but in the various tissues to which they are carried by the blood. The body is thus, as it were, all on fire.

To satisfy the demand for heat, we have a certain class of foods especially rich in carbon, and therefore well suited to the maintaining of normal temperature. This class is known as the "carbonaceous group," and includes starches, fats, and sugars.

While our bodies must be supplied with heat, it is quite as important that they possess an ample store of energy for work and exercise, in order that we may perform life's duties. In physics, we are taught that heat is one form or manifestation of force, and that heat may at will be converted into force, and force into heat. This is true of the heat and energy furnished by our carbonaceous foods. The fats are the great heat producers, while the starches furnish most of the energy.

Starch comes from vegetable foods,— chiefly the cereal grains, but also the potato and the banana.

Fats are found in olives; in nuts; in milk and cream; in butter; in vegetable oils, and other solid vegetable fats.

Sugar, generally speaking, is of four kinds,— cane, grape, malt, and milk sugar. The sugar from beets, being chemically the same as that from sugar cane, comes under the head of cane

sugar. In the making of refined sugar, the canes or the beets are first squeezed between rollers or presses to extract the juices. These juices are then evaporated to the sirup point, and the sirup is crystallized and separated from the molasses. The final result is the modern sugar of commerce.

Cane Sugar is not digested by saliva, but by the intestinal juices after it passes through the stomach; and if delayed too long in passing, it is likely to ferment.

Grape Sugar is found in fruit and honey. It is absorbed without digestion, and is perfectly wholesome.

Malt Sugar is found in sprouting grains. That is, the grain, in sprouting, acts upon the starch within itself, changing it to sugar. This is really an act of digestion. Sprouted grain is mixed

Making Cane Sugar

with scalded starch at 140° F. (Water at 150° is added to the starch, which cools it to 140°. Anything hotter than this, would destroy the action of the malt on the starch.) This is kept warm, and stirred occasionally; and in a few hours, the starch is changed to sugar. From this process come some of our best sirups.

Milk Sugar is contained in milk, and, like grape sugar and malt sugar, is natural and wholesome.

BODY-REGULATING SUBSTANCES

These are water, cellulose, minerals, and vitamines; and they serve to keep the body machinery in running order.

Water constitutes two thirds of the weight of the body, and enters into the composition of all the tissues and fluids. It is one of the most important of regulating substances, as it equalizes the temperature of the body, serves as a carrier of dissolved food material, and prevents the accumulation of waste material. Life can be maintained for a much longer period without food than without water.

Cellulose is the woody, indigestible part of vegetable foods, and is needed because it supplies a bulk necessary to facilitate the movement of food along the intestinal tract. Some raw foods, such as lettuce, celery, cabbage, radishes, water cress, cucumbers, etc., may well be eaten daily, as these pass through the system largely as bulk, at the same time furnishing to the body their valuable organic salts unchanged by heating.

Vitamines are found in all natural foods, especially in the leafy vegetables, in milk, in the germ and the outer layers of grains, and in fruits. When the outer coat (the bran) is removed from the wheat, and the brown coat is removed from the rice, as is done in polishing, these otherwise wholesome and nourishing foods become devitalized, and will not support life unless foods containing the missing elements are added to the diet.

"Better to search in fields for health unsought, Than fee the doctor for a nauseous draught."

II. THE VITAL ELEMENTS IN FOODS

(Vitamines)

In recent years, numerous experiments have been conducted in an effort to ascertain the exact nature of the faults in diet which lead to such diseases as beriberi, scurvy, pellagra, etc., declared by some investigators to be due to a lack of specific chemical substances in the diet.

The relation between disease and faulty diet was first brought to the attention of scientists about the year 1880, by the experience of the Japanese navy. The prominent place of rice in the diet of those who suffered of beriberi, led to a belief that it was a causative factor in the disease. In 1897, Eijkman took up the study of nutrition, demonstrating by experiment the fact that when pigeons were fed exclusively upon polished rice, they began to suffer of a nervous disorder, staggered, lost their power to stand up, or even to swallow food, and finally died. In other words, the pigeons developed a state of polyneuritis (inflammation of many nerves — *Dorland*), which is analogous to beriberi in man. He found, moreover, that when the pigeons were fed on the entire kernel, the disease did not develop.

In 1911, Dr. Casimir Funk took up the study of beriberi, and made an effort to isolate this singular yet unidentified substance contained in rice polishings, and also to determine what other foods contain it, and what influence it has on the health. He called this mysterious but absolutely indispensable substance "vitamine." The results observed among his birds when they were restricted to

milled rice and water were identical with those reported by Eijkman. He found that when the coatings that had been removed from the rice were soaked in water, and a little of this fluid was passed through a tube into each sick bird's crop, or, if the birds had not reached the stage where they could not swallow, a portion of the rice polishings was fed to them, in a few hours they made rapid recovery, and before the day was over they were apparently as well as ever.[1] It seemed like a veritable miracle. Evidently the Creator has placed in the covering of the rice something that is absolutely essential to life, and that the rest of the grain cannot supply.

Funk demonstrated, furthermore, that when fowls were fed on steel roller process white flour, in three or four weeks they were afflicted just as when they were fed on polished rice. That is, he discovered that the vitamines are in the outer layers in wheat, just as they are in rice. These experiments clearly proved that there is required in the diet something more than protein, carbohydrate, fat, and mineral salts.

In 1914, W. Richard Ohler, M. D.,[2] carried out a number of experiments with chickens, in order to furnish experimental proof for the contention that a more or less exclusive diet of white bread was the chief cause of beriberi in Newfoundland. Fourteen chickens fed on white flour bread, with or without yeast, died within twenty-eight to forty days. Before death, the birds exhibited symptoms of polyneuritis, and histological examination of the peripheral nerves revealed considerable degeneration. Five chickens fed on whole wheat bread, and two on whole wheat, lived in perfect health for seventy-five days, when the experiment was discontinued.

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[1] These experiments were recently duplicated in the chemistry laboratory of the College of Medical Evangelists, by Dr. E. H. Risley, teacher of chemistry, with similar results, thus verifying the fact.

As a result of being fed on an exclusive diet of polished rice and water, in a few weeks — three to five — the pigeons began to stagger, lost their power to stand up, and finally became unable to eat. At this point, a portion of fluid extracted from soaked wheat bran (in the absence of rice polishings) was administered by opening the birds' bills and forcing them to swallow it, with the result that the birds made rapid recovery, and in a short time were as well as ever.

[2] *Journal of Medical Research*, volume 31, No. 2.

Beriberi is a serious disease of the nervous tissues. As it progresses, it affects every tissue in the body and eventually the heart, and is fatal unless a substance containing anti-neuritic vitamine — or more definitely, water-soluble B — is administered. The pigeons in the former case, like the chickens in the latter, had beriberi. Observe that the rice with which the pigeons were fed was good rice, the ordinary white kernels commonly bought at the grocery, the hulls having been removed to make it attractive and to improve the keeping quality. The white bread that resulted in disease and death to the chickens in the latter case, was good bread, such as is commonly bought at bakeries. But the food was lacking in the essential accessory substances, the vitamines.

Hopkins[3] discovered that small additions of milk to food mixtures of purified protein, carbohydrate, fat, and inorganic salts, rendered them capable of inducing growth, whereas without such additions of milk, no growth could be secured. He interpreted this to mean that milk contains unidentified chemical substances indispensable to the diet, and that the failure of animals to grow, and to have a normal length of life, was caused by the absence of these essentials, which he designated "accessory" substances.

Experiments by McCollum and Davis[4] brought out the fact that although chemical analysis of whole grain cereal shows it to contain all the essential food substances, such as protein, starch, sugar, fat, and all the mineral salts that occur in the body of an animal, cows did not do well when fed strictly on seeds or seed mixtures. But when they were fed on a corn mixture, including the seed, straw, and leaf of the plant, their nutrition was excellent, as shown by their appearance, the vigor of their offspring, and their ability to produce an abundance of milk. This indicated a dietetic value in the leaf of the plant.

The work of these men showed, moreover, that certain fats, as butter fat, egg yolk fat, and numerous products of the plant kingdom, contain something that greatly stimulates growth when added to a diet of purified foodstuffs. Funk and Macallum

[3] *English Journal of Physiology*, volume 44, 1912.

[4] "Newer Knowledge of Nutrition," *Journal of Biological Chemistry*, volume 24, No. 4.

pointed out that butter does not relieve polyneuritis in pigeons. McCollum and Kennedy, after giving several reasons why the term "vitamines" was unsatisfactory, proposed the provisional terms "fat-soluble A" and "water-soluble B," because of the characteristic solubility of these substances in fats and water respectively.

(Since this was given out by McCollum, a third dietary essential has been discovered.)

FAT-SOLUBLE A

The best sources of this growth-promoting dietary essential, fat-soluble A, are whole milk, cream, butter fat, egg yolk fat, and some products of the plant kingdom, as the leaves of plants and certain roots. Such foods as bolted (white) flour, degerminated corn meal, polished rice, starch, glucose, and the sugars from milk, cane, and beet, are mentioned by authorities as especially poor in fat-soluble vitamine.

A lesson taught by experiences during the late war, was the importance of certain amounts of fat in the human dietary; as in those countries where milk, butter, and fats generally were unobtainable, the people became singularly susceptible to contagion. Tuberculosis, for instance, became a veritable epidemic when the fat supply was cut too low. Whether tuberculosis does not follow a deficiency of fat-soluble vitamine, rather than a general deficiency of fats, is a question that is still undetermined.

Whether an abundance of olive oil, cottonseed oil, or other vegetable fats, or lard, which do not contain fat-soluble vitamine, will provide against the incursions of tuberculosis, or if such fats as milk, cream, butter fat, and egg yolk fat, which contain fat-soluble vitamine, are absolutely necessary as a protective against disease, is a proposition that still awaits final solution.

The facts cited by recent investigators seem to agree that fat-soluble vitamine need not be sought solely in foods known to be rich in fats. Of the various plant structures, the leaves are the richest in fat-soluble vitamine. Some roots are next, and lastly cereal grains. Clover, alfalfa, spinach, Swiss chard, and lettuce contain the fat-soluble vitamine in similar magnitude; and of these, lettuce has the least.

Writing on the subject of "Fat-Soluble as Nutritive Factors in Plant Tissues," Osborne and Mendel[5] say: "0.1 gm. of alfalfa, clover, timothy, and spinach evidently furnishes relatively at least as much of this vitamine as does 0.1 gm. of butter fat. These vegetable products may in fact contain more than butter fat." This agrees with the work of Hindhede,[6] whose results with young men correspond with observations on laboratory animals. He has contended that fat is not required in the diet of adults if an amount of fresh fruits and vegetables sufficient to supply the vitamines is eaten daily.

Steenbock and Boutwell[7] demonstrated that fat-soluble vitamines are present also in some roots, and in cucurbitous vegetables (pumpkin and squash). They found the carrot and the yellow sweet potato to contain so much of the fat-soluble vitamine that, as a source of this dietary essential, they must be classed with leafy vegetables.

They found the yellow maize (corn) to be comparatively rich in this growth-promoting vitamine, as when animals were dependent on it for their fat-soluble vitamine, the results were good, and sometimes, even if not in most cases, normal. On the other hand, white maize, in every case where experimental animals were dependent on it for their fat-soluble vitamine, proved to be an absolute nutritional failure.

A lack of this essential constituent in the diet results first in a failure of growth and maintenance of life. Second, there is oft-occurring inflammation of the eyes, or xerophthalmia, and malnutrition of the skin, as indicated by encrustation of the ears, and sores on the body generally.

WATER-SOLUBLE B

This anti-neuritic dietary essential (the best prophylactic in the prevention and cure of polyneuritis) is found in abundance in all natural, unprocessed foods. Whole grain cereals, particularly the embryo and coverings of grain, and of the leguminous seeds, such

[5] *Journal of Biological Chemistry*, volume 41, No. 4, 1920, page 555.
[6] *Journal of Biological Chemistry*, volume 45, No. 1, 1920, page 152.
[7] *Journal of Biological Chemistry*, volume 41, Nos. 1, 2, 1920.

as dried peas, beans, and lentils, contain it in large amounts. The leafy vegetables — cabbage, spinach, lettuce, water cress, celery, and parsley — are rich in water-soluble B. It is also found in milk and egg yolk, but not in olive oil, butter fat, or any of the animal fats. The foods that do not contain it are polished rice, white flour, starch, white sugar, sirup, and fats. Water-soluble vitamine, it will be recalled, is the food accessory without which beriberi develops in birds, animals, and man.

The well-known investigators Chick and Hume[8] are quoted as saying that a real danger may be incurred by too exclusive use of bread made from highly milled wheat; that among groups of people living on restricted diets in which bread made from patent flour formed a large proportion of the total ration, beriberi was very common, whereas people living on similar diets, but with bread made from the entire kernel replacing that made from patent flour, were rarely afflicted. It is well known that in those parts of the world where the poorer classes subsist on a diet restricted largely to polished rice and fish, beriberi is very common, because of a lack of this dietary essential (B) in the food supply. A failure to provide for this important accessory results in malnutrition, followed by nerve degeneration, leading to a sort of paralysis in birds, and beriberi in man, both from the same cause.

Effects of Heat.— While dry heat (baking to a brown) seems to be very destructive to vitamines in general, most of the evidence agrees that A and B are not destroyed by heating for considerable periods of time by moist heat at a temperature of 212° F. or lower. Steenbock and Boutwell[9] showed that greens, sweet potato, carrot, squash, etc., suffer no appreciable loss of their vitamines by being autoclaved (cooked in a steamer) at fifteen pounds pressure. McCollum and Davis[10] found that wheat embryo could be heated for one hour at fifteen pounds pressure without apparent loss to the growth-promoting property. McCollum, Simmonds, and Pitz[11] detected little if any diminution when navy beans were heated in

[8] *Journal of Biological Chemistry*, volume 37, page 600.
[9] *Journal of Biological Chemistry*, volume 41, No. 2, 1920, page 169.
[10] *Journal of Biological Chemistry*, volume 23, No. 1, 1915, page 249.
[11] *Journal of Biological Chemistry*, volume 29, No. 3, 1917, page 525.

In patent roller flour, the life-sustaining properties of the whole wheat are missing.

a moist condition at 120° C. (about 15 pounds pressure) for one and one fourth hours. This shows that the vitamines A and B are stable to moderate heat.

WATER-SOLUBLE C

The information obtained from observations of human experience with inadequate war diet during the recent world conflict, together with extensive laboratory research, has clearly brought to view the existence of a third dietary essential, the *"antiscorbutic,"* meaning that which counteracts scurvy. It has served to emphasize the fact that scurvy in the guinea pig, that in the monkey, and that in man are alike occasioned by the lack of some specific substance in the diet which is not stable to heat.

Scurvy, often manifested in degenerative tooth changes, such as severe cases of looseness and finally falling out of the teeth, and soreness and bleeding of the gums (Osler), is one of the oldest of known diseases. It is usually associated in the mind with sailors on long voyages, living on salt meat and hard-tack. In years past, in times of war, not infrequently an army suffered a greater total of casualties from scurvy than from bullets.

When the situation in Europe during the recent war became such that in some localities both troops and civilians were compelled to subsist on unsuitable food, scurvy made its unwelcome appearance. This was not attributable to an insufficient supply of energizing substances, nor to a lack of foods containing a proper supply of protein constituents, but on the contrary, it was a forceful demonstration of the fact that in the midst of plenty, the nutrition of foods may be dangerously defective. It further demonstrated that while the caloric value of foods may rightly claim recognition, it avails nothing without the coöperation of accessory substances.

By the authorities of the American Medical Association,[12] we are informed that definite symptoms, resembling in several details those found in infantile scorbutus, were induced in guinea pigs by dietary deficiencies. Perhaps the most striking fact brought forth is the predisposing effect of an exclusive cereal diet, and the curative and antiscorbutic potency of fresh fruits and vegetables. Another fact discussed is the loss of this valuable property through certain methods of cooking and preservation, notably heat and desiccation (drying). We are told that in campaigns in Mesopotamia, the British forces in some places were afflicted with scurvy as the result of a constant and exclusive use of dried foods.

In a memorandum on food and scurvy, issued by the "Food [war] Committee"[13] of the Royal Society, London, England, we are informed that through the investigations carried on, especially at the Lister Institute, as to the cause of scurvy, nothing new had been found, save evidence of the presence, in many foods, of a

[12] *Journal of the American Medical Association*, volume 73, 1919, page 1288.
[13] *Lancet*, London, November 30, 1918.

certain basic substance, the exact nature and composition of which remain obscure, but whose benign influence is indubitable.

This authority puts forth the assertion that scurvy, like beriberi, is a deficiency disease, and is traceable to a long continued consumption of foods lacking in accessory food substance, or vitamine. This antiscorbutic vitamine (water-soluble C) is contained in fresh foods — in largest amounts in oranges, lemons, and fresh vegetables; in considerable amounts in roots and tubers (potato, etc.); also in small quantities in milk and fresh meat — but is very deficient in dried and preserved foods. The further statement is made that water-soluble C vitamine is destroyed by prolonged boiling; also that soda rapidly destroys the antiscorbutic properties of food, hence should not be added to the water in which vegetables are either soaked or boiled.

It is shown that beans, peas, and lentils in their dried condition possess no antiscorbutic properties. If, however, the dried seeds are soaked in water at room temperature for twenty-four hours, then drained and kept moist in thin layers until they germinate (about forty-eight hours more), they develop antiscorbutic vitamine, water-soluble C. It states further that the antiscorbutic value of fresh meat is very low in comparison with that of fresh vegetables, and that tinned and preserved meat possesses no antiscorbutic value.

Water-soluble C is very sensitive to heat or drying, although its keeping qualities seem to be much improved by the presence of an acid. Cabbage eaten in the raw state contains active antiscorbutic properties; but when it is dried or boiled, its antiscorbutic properties are practically null. Most of the neutral vegetables, as peas, corn, etc., lose their antiscorbutic properties in the process of canning and drying.

On the other hand, in the case of tomato and orange, which are acid, the effect of boiling or drying is not nearly so pronounced, as a great deal of the antiscorbutic vitamine is preserved in canned tomato, also in dried tomato and orange. Canned tomato therefore constitutes one of the most useful accessories for the long winter months, when, in many places, canned goods are

largely used, likewise for sailors on long voyages, and for armies in the field. An editorial in the *Journal of the American Medical Association,* under the heading, "Orange Juice Considered in a New Light," says on this point:

"It is recognized by pediatricians that artificially fed infants thrive better if they receive some addition to cow's milk, particularly when the latter is Pasteurized or sterilized. One reason for this, now understood, is that many of the artificial food mixtures are likely to be qualitatively incapable of averting scurvy in young children, so that some added antiscorbutic must be provided. For this purpose orange juice has attained a well deserved popularity.

"Owing to the price and occasional scarcity of oranges, notably during the war, special efforts were made, both here and abroad, to secure suitable substitute antiscorbutics for infant feeding. The use of tomato, first urged by A. F. Hess, of New York, has been particularly promising, owing to the fact that, in contrast with some other antiscorbutics, this readily available vegetable can be dried or canned without losing its potency in antiscorbutic vitamines, and it can be administered in various ways, including intravenous injection of the juice."—*June 19, 1920.*

As to the best ways of cooking fresh vegetables, with regard to preserving the water-soluble C properties, we quote from the *Lancet,* London, as follows:

"The destruction of the antiscorbutic properties depends rather upon the time than the temperature employed. All foods, especially vegetables, should be cooked for as short time as possible, at boiling point. Slow methods of cooking, such as stewing with meat or simmering below the boiling point, should be avoided. Potatoes should be plunged into boiling water, and the boiling continued for twenty to thirty minutes after the boiling point has again been reached."—*November 30, 1918.*

As throwing further light on the destructive effects of soda on vitamines, we refer to the experiments of Miller,[14] who states that the cooking of navy beans in 0.5% sodium bicarbonate (soda)

[14] *Journal of Biological Chemistry,* volume 44, No. 1, page 178.

solution for one hour and ten minutes caused a loss of 37.4% of vitamine.

To the common use of "soda biscuit" and of corn bread raised with soda, throughout the Southern States, is largely attributed the prevalence of pellagra and other deficiency diseases, due largely to a lack of a proper supply of food accessories, the vitamines.

When fruits, salad plants, herbs, and fresh vegetables are described as antiscorbutic, the meaning is simply that they have the power of preventing those changes in the blood which produce scurvy. What they really do is to supply the blood with various salts and accessory substances which maintain the body fluids in their proper chemical condition, thus preventing tissue change and decay.

VITAMINES AND CALORIES

In the past, it has been customary to express the value of a diet largely in terms of heat units, or calories, since it was supposed that the value of foods depended largely, if not entirely, upon the amount of heat produced from the consumption of their so-called nutritive constituents — protein, carbohydrate, fat, etc. Therefore, with the rise in prices of foods generally, as the result of the great war, the public was well advised to consider the caloric value of the foods purchased, in order that the greatest possible amount of energy might be obtained for the least expenditure of means.

The result was, there came a tendency to purchase food by the calorie rather than by the kind. This principle is all right so far as it goes; but in the light of our newer knowledge on the subject of nutrition, it falls far short of the actual needs of the human machine, which is infinitely more complicated than an ordinary mechanical contrivance.

As a result of biological studies carried on during the past few years, much light has been thrown on this important subject. For instance, a diet was constructed in which protein was represented by the casein in milk, carbohydrate by starch, and fat by lard, all carefully purified by chemical treatment, so as to exclude anything but these three substances. This was fed to young rats

in quantity more than sufficient for their daily output of energy. Such a diet is sufficient, both in quantity and in quality, for the *nourishment* of the animal; but it does not contain any of the vital constituents of fresh foods, the vitamines. In *theory,* this should form an ideal diet; but in *practice,* it was found that the animals soon ceased to grow, and also developed certain diseases, notably rickets and scurvy. When this stage had been reached, a small quantity of fresh uncooked food was added to the diet, whereupon growth was resumed and the animals became healthy again.

Further experiments brought to light three very important additional facts; namely, that animals fed on chemically pure foods showed a markedly diminished power of resistance to infectious diseases; and in the case of female rats, the offspring were poorly developed; and the mothers were unable adequately to suckle their young. Dr. Harvey W. Wiley, expert in food and nutrition, says:

"Up to the era of the discovery of the cause of beriberi, the principles of correct diet were based upon the supply of a so-called balanced ration. . . . We were taught that this balanced ration consisted of certain amounts of protein, carbohydrate, fat, and minerals. Much to the astonishment of physiologists, it was discovered that when an animal was fed pure protein, pure carbohydrate, pure fat, and pure mineral, it failed to grow, gradually lost weight, and finally died."

"Our whole system of diet, therefore, has to be reconstructed from the discoveries of the last fifteen or twenty years. These discoveries have particularly emphasized the food value of the external coatings and germs of cereals. This value rests not alone in their content of ordinary digestible foods, but exists particularly by reason of the water-soluble vitamine contained therein.

"Perhaps there is no point in medicine so confusing and conflicting as the dietaries prescribed by the attending physician in case of illness, and likewise for children and grown persons as a preventive of disease. The very foods that have been most denatured, and therefore are least wholesome and assimilable, are constantly prescribed by physicians for the well as for those who are ill. The functions of leaf vegetables, for instance, so important

in dietetics, and carrying as they do the chief fat-soluble vitamines, are those that the physician too often neglects."— *Quoted in "Literary Digest," June 7, 1919.*

Thus we find that there are three vitamines; and there are possibly more, as scientists believe there is a fourth which cures rickets in children; and there may be others. Vitamines are not manufactured in the body; neither are they contained in soil, in combination with minerals; but they are elaborated by the plant itself. A lack of these accessories in the daily food is a species of starvation, and ends disastrously unless the body can be supplied with those substances so abundantly provided in unprocessed and uncooked foods. The subject is one that presents fascinating fields for experimental study and research; and every advance step serves to bring us nearer to nature and to nature's God, leading to the avoidance of needless suffering and disease, and to the betterment of mankind.

III. FOOD MINERALS ESSENTIAL TO ALL LIFE

"Learn from the birds the food the thickets yield;
Learn from the beasts the physic of the field."
"Eat to live rather than live to eat."

A MOST interesting parallel is observed in the study of the composition of the human body, the cells of plants, and fertile, fruit-bearing soil. Professor Sherman,[1] of the Columbia University, gives the following list of elements as composing the human body: *oxygen, carbon, hydrogen, nitrogen, calcium, phosphorus, potassium, sulphur, sodium, chlorine, magnesium, iron; iodine, fluorine*, and *silicon* in very minute quantities; also traces of *manganese* and *aluminum*. The same text shows that natural, unrefined foods contain these same elements in varying quantities and proportions.

Analysis of normal soil[2] reveals the same elements to be contained in earth, and experience teaches us that these various mineral elements in the soil are absolutely necessary to insure a paying crop of grain or vegetables. The average farmer seems to recognize instinctively that a lack of soil minerals would result in a feeble or stunted yield, hence he looks well to the matter of the richness of the soil before casting in his seed. Intelligent stock raisers, who make a business of feeding cattle for definite ends, calculate the results according to fixed laws. Proper food is the means whereby they supply the essential building material for the physical needs of the animals in which their money is invested.

With respect to his own food, however, man persistently violates one of the most beneficent of nature's laws, in that he submits his most staple foods to a process of hulling and scouring that leaves them almost void of the mineral and vitamine on which life is so dependent. These very important parts of our food are carefully separated from *our* food and fed to *farm animals,* thereby developing magnificent specimens of stock, while our own health suffers proportionately from a lack of these elements.

[1] "Chemistry of Food and Nutrition," page 234.
[2] "Soil Analysis," volume 1.

To a certain extent, these elements are constantly given off by the body; and consequently our food must furnish a continual resupply of them. The carnivorous as well as the herbivorous animals must have these needs satisfied; but in flesh foods, these elements are not evenly distributed. Hence the carnivora eat the whole carcass,— viscera, hide, bone, and all,— in order to obtain these mineral elements, which are found largely in the bones and other hard parts. When we use flesh as food, we select for alimentation only the muscular parts, which are poorest in mineral.

With this, there is the growing tendency to rely upon artificially prepared foods,— sugars, white bread, white rice, package foods, etc.,— from which the greater portion of essential mineral and vitamine has been removed. This in itself would be sufficient to constitute a potent factor in degeneracy and disease, even with an abundant supply of otherwise energetic food.

While it would be a question of the greatest difficulty to determine exactly how much of each of these numerous mineral elements we need, it suffices us to know that they are most important, and it would seem reasonable that we should have all that natural foods contain. The condition of the blood depends upon the character of the food supplied to the digestive organs. In compounding that marvelous stream, which carries life to every tissue and organ of the human body, nature obtains her building materials from food, just as she obtains food from soil, water, and air.

The different mineral ingredients present in the internal secretions of the human body have their definite functions to fill in the maintenance of good health, and are not present there through blind accident. The Master Architect who made the human body, and who declared that "the blood is the life," placed these food essentials called vitamines, and the various mineral ingredients, in the fruits, the grains, the nuts, and the vegetables; and these elements must be *in* the food in order for the body to take them *from* the food. The removal of one or more of these constituents from our food may mark the beginning of disaster to the body.

In their absence, the body may make use of others until the handicap asserts itself; then the physician is sought, or perhaps resort is had to some drug, in a vain effort to correct the disorder.

THE BODY'S INTERNAL DEFENSES

If we put a drop of blood under a microscope, a seemingly countless number of small corpuscles come into view. Most of them are red, but some are white. They have a well defined work to do in the defense of the body against intruding germs of disease. The white corpuscles are always present in inflamed parts, and take into themselves foreign particles in the blood, minute organisms known as bacteria. These little corpuscles are called the "soldiers" of the body; for they play a prominent part in the cure of diseases, and in their prevention in persons exposed to infection.

Together with them in the blood, in which they circulate, and as part of their structure, we find the before mentioned mineral elements — iron, phosphorus, potassium, calcium, etc. This is always the case when pure blood is examined. The blood corpuscles so necessary to our welfare are never without iron; and when the iron is removed, these little warriors die. The constancy with which these mineral elements appear in the soil, in plants, in all natural foods, and in the tissues of the human body, reveals the fact that they are absolutely essential to life. In the face of this great truth, we see vast commercial enterprises built up for the sole purpose of removing them from our food. Notwithstanding this, the blame for the prevalence of disease and broken constitutions is usually thrown upon God.

When the diet is composed largely of refined foods, no matter how much nourishment the food might otherwise contain, the system cannot make the best use of such nourishment, because of the absence of those elements necessary to its assimilation. Dr. William Edward Fitch, major Medical Reserve Corps, U. S. A., says on this point:

"It is known at the present time that life cannot be maintained on foods deficient in inorganic salts. It is also recognized by research workers that something more is essential for the main-

tenance, growth, and well-being of man than protein, carbohydrate, and fat. Unless food contains sufficient mineral matter, no matter how well balanced the ration may be in the ternary food elements, nor how large quantities are ingested, nor how high the caloric value, there will be malnutrition. In Forster's experiments, dogs and pigeons fed on demineralized food died earlier than those that were entirely deprived of food."—*"Dietotherapy," volume 1, page 260.*

The following table is from an outline given in the same text, entitled *"Analysis of Wheat and the Products of Roller Milling."*

	Protein	*Fat*	*Starch*	*Ash* (mineral matter)
	%	%	%	%
Wheat as it enters the mill	14.18	2.61	69.94	1.91
Patent roller, high grade flour	11.20	1.00	74.70	.50

A study of this table shows that there is a substantial loss in protein in converting the wheat into white flour, a loss of more than 50% of fat, and a total loss of combined mineral matter to the extent of nearly three fourths the amount contained in the whole grain, while the proportion of starch is correspondingly greater. In these modern times, when so many of our staple foods are submitted to refining processes that in many instances remove the larger portion of these valuable minerals and vitamines (found principally in the germ and outer coverings of the seeds), it is well to understand something of the wonderful functions of food minerals in the maintenance of life and health.

FOOD IRON

The function of iron in the human body is of the highest importance. Iron is used by the body in carrying the oxygen from the lungs to the tissues, where the processes of nutrition are carried to completion, and the waste substances so dangerous to life are oxidized. The hæmoglobin (red coloring matter of the blood), like the chlorophyll (green coloring matter in plants), is dependent on iron for its existence. Concerning the importance of a proper supply of food iron, Professor Sherman says:

"There is no considerable reserve store of relatively inactive iron in the body corresponding to the store of calcium and phosphorus in the bones. Hence if the intake of iron fails to equal the output, there must soon result a diminution of hæmoglobin, which if continued, must mean a greater or less degree of anæmia." —*"Chemistry of Food and Nutrition," page 285.*

According to Graham Lusk,[3] ordinary white flour contains only 1.5 milligrams of iron in 100 grams of fresh substance, as against 5.2 milligrams in the same quantity of entire wheat flour; white flour contains only 146 milligrams of potassium and 86 of phosphorus, as against 515 milligrams of potassium and 469 of phosphorus in the same quantity of entire wheat flour.

When iron is lacking in the food, and consequently in the blood, the color vanishes from the cheeks. Iron deficiency baffles many, even physicians, who often fail to see an abundant supply of it at their very doors. The most prolific sources of food iron are the well-known greens,— spinach, beet greens, dandelion greens, lettuce, succulent vegetables, and many fruits, especially strawberries and prunes.

FOOD CALCIUM

This inorganic mineral, according to Sherman, constitutes about 2% of the entire body weight; and of this total amount, about 99% is in the bones. The remaining per cent, though small, being an essential constituent of the soft tissues and the body fluids, is absolutely necessary to the normal action of the heart muscle, and to the coagulation of the blood. Experiments on birds showed that when the birds were fed for a length of time on a calcium-poor food, there was a marked wasting of calcium salts from various bones; when the birds were killed and dissected, some of the bones were found to have been perforated in order to supply needed lime for the body's metabolism.

This may serve to explain the cause of the hollow teeth and bone deformity among children fed largely on white breads, sugars, candies, and flesh meats, all of which are very poor in calcium. May we not conclude that when they are fed on such

[3] "Science of Nutrition," third edition, page 360.

a diet, the body will retaliate, as it were, and draw upon the bones and the teeth for that which is lacking in the food?

Almonds, milk, egg yolk, oranges, prunes, carrots, parsnips, and entire ground cereals are rich in calcium. As set forth by Sherman, the entire wheat products contain more than twice the amount of calcium found in white flour.

DEMINERALIZED FOOD AND CONSTIPATION

Constipation is declared to be the most prevalent ailment of civilized man. It should be regarded as but a condition of deranged nutrition; and consequently any treatment, to be efficient, must be directed not simply toward the temporary removal of the symptom, but at the cause. A fact which should be more generally known, is that nature provides a powerful yet harmless laxative, which will accomplish for the individual what no medicine can do. This laxative is in all plain, unrefined, wholesome foods as furnished by nature.

Natural foods, when not submitted to the modern refining processes, contain a bulky element — the rough, indigestible particles of vegetable matter that absorb moisture and increase the volume of the bowel content, thereby exciting them to more thorough action. Besides promoting this mechanical propulsion, unrefined foods contain certain properties that lubricate the bowels and stimulate peristalsis. These are the acids, the fats, and the mineral salts.

Examples might be multiplied that indicate the evil effects following the continued use of demineralized foods, which have been robbed of the greater part of their essential mineral and vitamine in order to convert them into products that will "keep." Diagnosticians agree that many of the ills that afflict mankind are preceded by constipation. They also agree that freedom from constipation averts many ills. Peoples who subsist on foods as nature supplies them are not troubled with constipation. Decaying teeth, appendicitis, tonsillitis, and constipation are rife among all civilized peoples who eat largely of concentrated foods, and who remove the hulls from their cereals in preparing them for eating.

WHITE AND ENTIRE WHEAT BREAD

A good deal has been said, during the past few years, as to the respective merits of entire wheat and white flour breads. Entire wheat flour is simply the whole grain ground up; white, or so-called refined flour, is obtained by removing the germ and most of the outer covering of the grain. The ordinary "Graham" bread sold by most bakers is merely white flour mixed with bran, and usually a small amount of molasses or malt, to give color and flavor. This is not the same as entire wheat bread, because white flour and bran are only two out of several products of the mill, middlings, shorts, etc., also belonging to the bread.

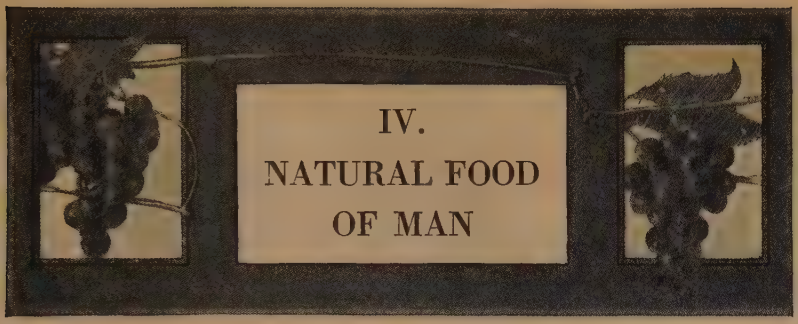
The analysis of entire wheat and white flour, as given on page 32, shows the removal of the greater part of combined mineral from wheat, in the manufacture of modern white flour; and the same is true of the commercially ground corn meal. This is significant indeed, when so much is heard about "deficiency" diseases, and the association of deficiency of mineral and vitamine with nervous collapse, rickets, etc. The natural result of living on a more or less exclusive diet of white bread, white rice, refined sugars, demineralized breakfast foods, and vegetables that have been depleted of their mineral salts by improper cooking, is a condition of saline starvation; and it often manifests itself in nervous irritability, neuralgia, sciatica, and other complaints of a nervous origin. As one writer (Broadbent) has said, *"A whole page could easily be filled with a list of protean maladies due to this condition."*

Thus we may say positively that what is craved by the normal appetite, and fills so important a place in the vital economy, is not the white sugar of commerce, but the saccharine elements in fruits and succulent vegetables. It is not the starch of refined white flour, or polished rice, or degerminated corn meal, that is needed to nourish the body and develop strength, but it is the amylaceous (starchy) matter and oily constituents contained in foods proper, which, when combined in the food entire, give honest, all-round building material.

Nearly one hundred years ago, Sylvester Graham led out in a great health movement in America, in which multitudes who had been considered incurable were restored to health by adopting his dietetic ideas. He advised his followers to eat entire wheat bread (it became known as Graham bread, after his name), which other people despised, just as the nations of the East were despising natural brown rice, and were suffering physical disorders in consequence. Graham taught the people the importance of the whole grain, including its outer coverings, and of the fresh green foods in all their strength. He advocated the use of the very foods that contain vitamine, and we are now in possession of evidence as to the scientific reasons for the results he obtained.

Polished rice, white bread, refined sugar, and demineralized foods generally, do not introduce some mysterious germ into the body: their use simply deprives the blood and the tissues of those particular elements which are essential for nutrition and growth in both children and adults, and which are contained in the portions that are removed in the refining process. It is thus that the body's defenses are broken down and its immunity destroyed. These so-called refined cereal foods, flours, flakes, sugars, etc., are but a modern invention. Our grandfathers knew little about them, and suffered less from the present-day deficiency diseases that tax the ingenuity of the medical profession and fill untimely graves.

Nature's remedies for many of the modern ills may be had by all. Unbolted wheat and corn breads, natural brown rice, with an abundance of fruit and succulent vegetables, furnish a combination of body-building elements which makes for red blood and all-round general health. The best way to avoid disease, as well as to prepare for any "epidemic," is to build up the body's resistance by the use of wholesome, unprocessed foods, containing the organic ingredients necessary for the maintenance of a disease-resisting vitality, which is the best protective against the diseases that infest our world.



IV.
NATURAL FOOD OF MAN

"Tell me what you eat and I will tell you what you are."

SINCE the elements that enter into the composition of the body are precisely the same as those which compose plants, it follows that a proper diet for man must be such plants as contain these chemical units in proper proportion. The human body being unable to assimilate these mineral elements in their *inorganic* condition, they must be *organized,* as in plant life, before they can be of use to the body.

Only plants have power to absorb these mineral salts from soil, water, and air, and organize them into food for the use of man. For this reason, the patent medicines that purport to contain these mineral ingredients are of little value. Some of these minerals are actually poisonous when taken in their free state. But not so when nature finishes her work of combining and compounding them; they are then no longer poisonous, but actually beneficial to both plant and animal.

The vegetarian diet is the natural diet of the human race; and one of its great advantages is that it is composed of foods that are more or less complete in the essential constituents, containing in varying proportions protein, carbohydrate, fat, mineral matter, and the indispensable vitamine, which combine to make the food fully adapted to the needs of the body. Dr. Alexander Haig, uric acid specialist of London, England, says concerning the adaptability of the vegetarian diet to life and health:

"That it is easily possible to sustain life on the products of the vegetable kingdom needs no demonstration for physiologists, even if a majority of the human race were not constantly engaged in demonstrating it; and my researches show, not only that it is

possible, but that it is infinitely preferable in every way, and produces superior powers of both mind and body."—*"Uric Acid in the Causation of Disease," page 864.*

TRUE FOOD SATISFIES HUNGER

A wrong impression of the vegetarian diet is often received by those who would test it by trying an occasional meal without meat. No diet can be fairly judged in this casual way. In the first place, those who are accustomed to the stimulation of meat will most certainly feel the want of such stimulation on leaving it off abruptly for a meal or two. In the second place, the system that has become accustomed to digest principally flesh food, finds some difficulty at first in digesting other foods; hence it requires a little time to adjust itself to the change.

Another wrong impression in the minds of some, is the fear that in leaving off the high protein meats, they would have to eat far too much vegetable food in order to supply sufficient protein, and thus would have a preponderance of starch. One good woman understood that a person must take enormous quantities of haricot beans or other protein food to compensate for leaving off flesh meat, and was "quite beat to take four platefuls"! But this is altogether a wrong idea; for all the legumes (beans, peas, and lentils) are exceedingly nutritious and heavy in protein, and their liberal use is almost sure to overload the system with nitrogenous material.

There are still others who, having subsisted on flesh foods, claim that vegetable food does not satisfy the appetite. This is largely due to one of two factors, or to both. In the first place, the qualities in cereal foods that satisfy the appetite are their mineral salts, contained in the germ and outer coatings of the seeds. These having been almost entirely removed from our modern flours, breads, etc., also from vegetables pared too thickly, the eater of such demineralized food is left with an unsatisfied craving for elements that the body actually needs. This craving leads to overeating, in a vain effort to satisfy the demands of nature.

A second factor is that flesh eaters usually eat rapidly, without thorough mastication; and as starchy foods are dependent upon

the action of the ptyalin of saliva for proper digestion, and consequently require more thorough chewing than flesh foods, they are likely to ferment in the stomach if eaten hastily. Entire meal cereals and breads, with an abundance of fresh vegetables, both cooked and raw, together with moderate amounts of nuts and dairy products, legumes, etc., satisfy the normal appetite without any "stuffing," and without the sensation of "fullness" after meals which is so characteristic of many who partake largely of refined cereal foods and flesh foods.

In referring to the effect of improper diet on health and longevity, Seneca, the old Roman who attained eminence as a rhetorician under the early empire, is quoted as saying, *"Man does not die; he kills himself."* It is when we scorn natural food, and follow after artificial gratifications and indulgences, that the body powers are weakened and sickness results. Natural, wholesome, and seasonable foods, when prepared and served in an appetizing manner, will be relished in the eating. "A good appetite needs no brush"— it relishes good food that is well prepared and attractively served, and thus a minimum of work will be thrown on the system, the health will be promoted, and efficiency will be increased.

VEGETARIAN DIET AND LONGEVITY

The diet originally planned for man, and that enabled him to attain to the age of nearly a thousand years, is outlined by the pen of inspiration in the first chapter of Genesis, twenty-ninth verse: *"Behold, I have given you every herb yielding seed, . . . and every tree, in which is the fruit of a tree yielding seed; to you it shall be for food."* (A. R. V.) Thus the One who created man, and who understands his every need, appointed Adam his food, consisting of grains and nuts. After the fall, when the ground was cursed for man's sake, the herb of the field was added to his diet. (Genesis 3:17, 18.) After the Flood, when all vegetation had been destroyed by water, God permitted man to eat flesh. (Genesis 9:3, 4.)

It is interesting at this point to note the comparison of the length of life of men who lived before the Flood, and who sub-

sisted upon fruits and grains, with that of the generations living immediately after the Flood, who subsisted upon the flesh of animals, at least as part of their daily food. The following figures show that the average length of life for nine generations before the Flood, as recorded in Genesis 5:3-32; and 9:29, was 912 years. The average for ten generations after the Flood, when flesh meats were used as food, was but 317 years. (Genesis 11:10-32; 25:7, 8.)

NINE GENERATIONS BEFORE THE FLOOD

Name	*Age*
Adam	930
Seth	912
Enos	905
Cainan	910
Mahalaleel	895
Jared	962
Enoch (translated)	
Methuselah	969
Lamech	777
Noah	950
	8,210

Average, 912 years.

TEN GENERATIONS AFTER THE FLOOD

Name	*Age*
Shem	600
Arphaxad	438
Salah	433
Eber	464
Peleg	239
Reu	239
Serug	230
Nahor	148
Terah	205
Abraham	175
	3,171

Average, 317 years.

"And Haran *died before his father* Terah in the land of his nativity." Genesis 11:28. One would infer, from this scripture, that until about the tenth generation after the Flood, it was so unusual a thing for a child to die before its father, that mention is made of the fact in Holy Writ.

Following on, we briefly trace the history of the chosen people in their march down into Egypt, where they came under heavy bondage to the Egyptians until the time of their deliverance. When the prophetic period had expired, and the time for their release had come, God brought them out with a strong hand, to make them the depositaries of the Holy Oracles, and His peculiar treasure above all people. It was designed that through them, all the world should come to a knowledge of the true God. Their health was jealously guarded, and a fleshless diet was given them. (Exodus 16:35; Joshua 5:12.) But they despised "the corn of

heaven," and cried for flesh; so He permitted them to eat "clean" flesh. (Numbers 11:4-6; Deuteronomy 14:3-20.)

It is recorded in "A Prayer of Moses the Man of God," that the years of man were "threescore and ten"—an evidence that the race was not benefited in the least by a diet of flesh. (Psalm 90:10.)

Later, in apostolic days, when the gospel was preached to the gentiles, the message of physical holiness was again proclaimed as a part of the gospel of salvation, in the words: "Ye are the temple of God. . . . If any man defile the temple of God, him shall God destroy; for the temple of God is holy, which temple ye are." 1 Corinthians 3:16, 17. Then follows the statement of a great principle, defining the motive which should actuate the recipients of grace in the exercise of Christian temperance in all things, and which will prove a safe guide to follow in the selection of the kind and quantity of food best suited to the keeping of the body in a state of health: "Whether therefore ye eat, or drink, or whatsoever ye do, do all to the glory of God." 1 Corinthians 10:31.

This principle, if heeded, will control in all matters pertaining to the diet, as in every act of life, preserving us from intemperance in all its varied forms. "Every practice which destroys the physical, mental, and spiritual energies is sin. The laws of nature, as truly as the precepts of the Decalogue, are divine; and only in obedience to them can health be recovered and preserved."

The desire of God for every human being is expressed in the words, "Beloved, I wish above all things that thou mayest prosper and be in health, even as thy soul prospereth." 3 John 2. Here, as ever, inspiration places the health of the body on an equality with the health of the soul, as indeed they are dependent one upon the other.

To the chosen people, the laws relating to both spiritual and physical well-being were made plain; and on condition of obedience, they were assured, "The Lord will take away from thee all sickness." Deuteronomy 7:15. "Ye shall serve the Lord your God, and He shall bless thy bread, and thy water; and I will take

sickness away from the midst of thee." Exodus 23:25. These promises are likewise for us to-day; and it is the privilege of every child of God, through obedience, to know the meaning of His promise, "I am the Lord that healeth thee." Exodus 15:26.

VEGETABLE AND FLESH FOODS CONTRASTED

In their growth, vegetables secrete no poisons; whereas in all animals, the very processes of life consist in the breaking down of tissue, and the formation of products of waste and oxidation. Thus when we eat flesh, we ingest, along with muscle and nerve cells, those waste and poisonous substances known as urea, uric acid, creatinine, etc. These poisons taken into the body must be eliminated, together with the normal amount of uric acid formed within the human body; and thus extra work is thrown upon the kidneys and the eliminative organs. This keeps the human machinery at high tension; and the process kept up, inevitably results in raising the blood pressure, often producing Bright's disease.

Because of the presence of these waste and poisonous substances, flesh foods stimulate and excite the nerves. The effort on the part of nature to rid the system of poisons is commonly mistaken for real energy; but in reality, the action upon the body is the same as when tea, coffee, and alcohol are taken. For this reason, a patient with gout or inflammatory rheumatism is ordered by the physician to discontinue at once the eating of any kind of meat. The system, being already laden with poisons, cannot tolerate the burden of additional quantities of uric acid ingested with meat.

All the nourishment that is found in the world to-day was made by the plants. This is evident when we consider that the greater quantity of vegetable food ingested by the animal is burned as fuel, leaving within the flesh of animal or fowl, only a remnant of the energy and food elements originally obtained from plants. This remnant amounts to about 25%, with 75% waste; whereas in our cereal grains, we receive 75% of nourishing properties, with only 25% waste. This so-called waste in whole meal cereals is not waste at all as compared with that found in meat; for the

12% of water in wheat is of the purest, and the rough part, when ground with the wheat entire, furnishes a necessary bulk, and is rich in mineral and vitamine.

As a further illustration, we compare the following analyses of fresh perch and sweet apple.[1] It will be seen that the fish under consideration contains about 90.9% of water and refuse, with 9.1% of nourishing properties, as against 88.3% of water and refuse in

FRESH PERCH

SWEET APPLE

ripe apple, with 11.7% of nutriment. This comparison shows, moreover, that we receive a greater total of food units in a pound of fruit than in the pound of fish.

	Water and Refuse	*Protein*	*Fat*	*Carbohydrate*	*Mineral Matters*	*Total Calories*
Fresh Perch	90.9	7.3	1.5		.4	200
Sweet Apple	88.3	.3	.3	10.8	.3	220

Some may dispute the above reasoning, on account of the reputed value of fish protein. However, it is well known that for persons using a variety of vegetable and cereal foods, together with a moderate proportion of dairy products, this high percentage of protein in fish and meats not only is useless, but actually overburdens the system with a dead weight of surplus material. On the other hand (from the standpoint of purity), the advantage is altogether on the side of the fruit, as in fruit we receive of the purest distilled water, charged with most cleansing acids, while the water found in the animal's body is filled with refuse material,

[1] Bulletin No. 28, United States Department of Agriculture.

which must be expelled from the system at a great expense to the excretory organs.

A further study of the analysis of food, shows that in nutritive value, each pound of corn is equal to about two and one half pounds of beef. Consequently, it would seem the very height of wisdom to get the nutriment direct, by eating the corn or other cereal in good bread or other delicacy, rather than feed it to the animal and then eat it in the form of steer or hog.

Though we allow that animal products all contain a share of the nutritive constituents necessary for our existence, because the animal has taken sustenance from the vegetable kingdom, nevertheless, when we eat flesh, we are but eating grains and vegetables at second hand. The life that was in the vegetable passes into the eater; and though we may receive it in part by eating the flesh of the animal, how much better to get it direct by eating the food originally provided for our use!

The gift of taste came from God, just as much as sight or hearing; and we should derive enjoyment from the healthy exercise and proper use of these special senses. Through habitual indulgence in stimulants, condiments, and highly seasoned foods, the taste becomes perverted, and as a result, can detect but few flavors in food, principally *salt, sweet, bitter,* and *sour.* By partaking of simple, natural foods, carefully prepared, and served in an appetizing manner, we may so develop the sense of taste as to find genuine satisfaction in the flavors from the food we are eating, as a lover of music does in hearing a star musical performance, or as an artist does in seeing some masterpiece in an art gallery.

The process by which meat is made tender (ripe) is nothing but partial decomposition. Insidious poisons are thus developed, and are added to those present during life. This is not true of foods from the vegetable kingdom. These contain within themselves the very essence of life, manifest in the tiny organ of reproduction, and if hidden in the earth, will soon give proof of life within, thus assuring us of the purity and freedom from putrefaction and poisons of the food that is to build bone and sinew.

VEGETARIAN DIET AND ENDURANCE

The history of nations, as well as the records of athletic contests, testifies that the vegetarian diet is capable of developing the highest degree of strength and endurance. The seemingly invincible Spartans were an illustration of this fact. The Romans, moreover, were vegetarians in the days of their prime; and their degeneracy began when they gave themselves up to the indulgence of unrestrained appetite, including the use of flesh and strong drink. The fallacy of maintaining that the vegetarian diet will lessen energy is made plain when we consider the endurance of vegetarians generally. In India, China, and Japan there are possibly eight hundred million people, strong, active, healthy, and long-lived, the larger proportion of whom seldom if ever eat animal flesh.

A Test of Endurance

The *Chinese coolie,* though not a giant in stature, will draw a load of human freight at the speed of a horse's trot, for a distance of from thirty to forty miles at a time; and his diet consists of rice, dates, vegetables, and rarely a small portion of fish. The *Hindu messengers,* who carry dispatches long distances, day after day, live principally on rice. The *Irish peasant,* who ranks among the most active and aggressive of men, subsists chiefly on potatoes, buttermilk, and simple cooked vegetables. The native *Andean Indian* is able to do a day's work which for its magnitude is said to be beyond comparison with that of our ordinary day laborer, often carrying on his shoulder burdens of two hundred pounds weight, day after day; and his food is largely bananas and whole meal cereal. The fare of the *Russian*

peasant is for the greater part black bread, milk, and vegetables; yet he often works from sixteen to eighteen hours a day, and his strength is not inferior to that of his foreign neighbor.

With reference to the effect of the vegetarian diet on the strength and endurance of animals, we may say that the elephant, the strongest animal known; the horse, one of the fleetest; and the camel, the most enduring,— all proverbial for their hardiness and vitality,— subsist entirely upon natural foods. The vegetarian ox will plod on day after day without exhaustion; but how would it be with the flesh-eating lion or tiger? Though these are the strongest and most ferocious of the flesh eaters, and would be very quick for a fierce fight lasting but a short time, they would soon faint if attached to the plow. Anatomy, physiology, and instinct, all witness to the fact that man is by nature a fruit-eating creature. These expressions from well-known naturalists undoubtedly voice the sentiment of most persons who have made a careful study of the subject:

"The natural food of man, judging from his structure, consists of fruit, roots, and vegetables."— *Cuvier.*

"It is vulgar error to regard meat in any form as necessary to life."— *Sir Henry Thompson.*

"No physiologist would dispute with those who maintain that man ought to live on vegetarian diet."— *Dr. Spencer Thompson.*

In his article, "To Raise a Family in Whose Arteries the Blood Leaps," Mr. Heppe says:

"An excessive meat diet, while producing, in life's first half, extraordinary energy and restless activity, leaves the body a used-up empty shell after forty-five. It acts like a furnace with a forced draft."

"Simple fare and correctly prepared foods . . . will keep the human body the replica of the divine form. It will not develop excessive fat or obnoxious pugnacity, but rather will it leave the mind free for the contemplation of life's highest ideals."—*"American Cookery," January, 1920.*

Prize fighters, while in training for mastery in strength, discard flesh food as material not best suited to the accomplishment of their aim, that of developing the greatest possible endurance.

In the athletic contests that have taken place within the last few decades, such as walking, swimming, bicycle riding, arm holding, knee bending, leg raising, etc., and which have represented the vegetarian on the one hand, and the flesh eater on the other, the vegetarians have usually proved easy victors. Perhaps the most reliable endurance tests so far recorded, showing the effects of diet upon endurance, were made by Irving Fisher, professor of political economy, of Yale University, on a large number of men, to test the endurance of flesh eaters and flesh abstainers. These experiments showed that the vegetarians surpassed the flesh eaters on an average of from 50% to 200%. In summing up the results of these and other experiments, Professor Fisher says:

"These investigations, with those of Combe of Laussanne, Metchnikoff and Tissier of Paris, as well as Herter and others in the United States, seem gradually to be demonstrating that the fancied strength from meat is, like the fancied strength from alcohol, an illusion."—*"Scientific Nutrition Simplified," page 149.*

Animal food as a strengthening article of diet is fast falling into the same category with alcohol. The idea sometimes presented, that in order to be strong, a person must partake of the flesh of a strong ox (without considering the source from which the ox obtains strength), is akin to the belief of the head-hunter, who imagines that by sacrificing a strong man's life and feasting upon his heart, he may imbibe the strong man's bravery and strength.

There were many ancient men of renown who are known to have been vegetarians. We may mention first of all, Daniel and his three companions in Babylon. He requested for himself a vegetarian diet in preference to the flesh and wine served from the king's table. His consequent good health and physical vigor made possible a great intellect; and at the end of three years, he had ten times as much wisdom as the great men of the king's realm. (Daniel 1:8-21.) Then we may mention the well-known

"The fancied strength from meat is, like the fancied strength from alcohol, an illusion."

names of such men as Plutarch, Tolstoy, Pythagoras, Linnæus, Seneca, Buddha, Plato, the Stoics; and a host of others if time and space would permit.

FLESH EATING A CAUSE OF DISEASE

There remains but to call attention to the fact that cattle in this and other lands suffer to a great extent of malignant diseases, such as cancer, tuberculosis, anthrax, foot-and-mouth disease, Bright's disease, etc., and that a large proportion of the flesh obtained daily through the regular channels and consumed as food, is that of animals killed when suffering of one or more of these maladies. The prevalence and increase of ulcer of the stomach, cancer, Bright's disease, and tuberculosis, undoubtedly bear a close relation to the modern excessive use of flesh as food.

It is customary to sell the flesh of tuberculous animals for food, even when portions of the animal are condemned. Quite recently, as brought to the writer's notice, a herd of dairy cows in a near-by canyon, when subjected to the tuberculin test, gave 80% reactors; whereupon the whole herd were sold as "feeders," and sent to a pasture land to await their turn in supplying beef-steak to the unsuspecting public. One housewife, having purchased

beef at the counter, upon returning home found the meat so conspicuously full of lumps and spots that she sent it to the inspector. After careful examination of the beef in question, he gave the following verdict: *"There is a certain amount of tuberculosis in the meat, but not more than the law allows."*

If the organs of an animal prove, on examination, to be tuberculous, how can the blood that circulates through these organs be pure? And if the blood is impure, what hope is there that the flesh is untainted with disease? And if the flesh is tainted with disease, how can it be fit for human food?

Cancer, especially cancer of the stomach, is a disease that baffles the skill of the medical profession. The most frequent cause of cancer of the stomach is believed to be an irritated mucous membrane, or ulcer. It is an undisputable fact, though one not generally recognized, that ulcer of the stomach is rife among all classes of people who partake largely of flesh food. Upon good authority, it is said that ulcer of the stomach is not frequently met among peoples who subsist upon rice and vegetables,— for instance, the Chinese, the Japanese, and the Indians,—or among Asiatics generally; but as has been well expressed, *"The zone of the ulcer is the meat eater's zone."*

President William J. Mayo, in his address before the American Surgical Association, April 9, 1914,[2] on the subject of "The Prophylaxis of Cancer," said that cancer of the stomach formed nearly one third of cancer cases of the human body, and that the extraordinary frequency of cancer of the stomach was confined to civilized man. He stated further, that within the last one hundred years, four times as much meat had been consumed as before that time, and inferred that the increase in consumption of meat undoubtedly had something to do with the prevalence of cancer.

Julius Rosenberg, M. D., writing for the *Medical Record* of November 27, 1915, said concerning the increase of tuberculosis among cattle, and its menace to health:

"Cattle tuberculosis is rapidly increasing. There is scarcely a dairy herd without a number of infected animals. It is an ever

[2] *Annals of Surgery*, volume 59, No. 6.

growing menace. A conservative estimate places the number of cows dying yearly from tuberculosis at one million, were they permitted to die a natural death; but they are killed before drawing the last gasp, and served as prime beef."

ETHICS OF FLESH EATING

The use of flesh as food cannot fail to have its effect upon the work of evangelizing and uplifting mankind. The success of religious work depends largely upon the spiritual tone of the people. While all that is carnal in human beings is fostered and fed by the consumption of the flesh and blood of animals, the work of the gospel will be hindered to that extent. Those who are laboring to lead men to a higher state of spiritual experience should be doubly careful in regard to their own habits in the matter of flesh eating; and professed Christians generally should consider its effect upon their lives and influence.

Spiritual weakness and depression often have a purely physical cause. It is of little use to tell a man about salvation from bad temper unless you tell him some method of deliverance from the clogged and sluggish liver that is the cause of the bad temper. There is little hope of reforming a drunkard by spiritual means only, while he is feeding his craving for liquor by eating flesh and other stimulants; but if he abandons this custom, and adopts a diet of natural and wholesome foods, there is abundance of hope that his deliverance will eventually be accomplished.

History, observation, and experience all go to prove that the strengthening of that which is carnal within us, does not promote our moral and spiritual well-being. That animal food inflames the passions, and arouses all that is pugnacious and cruel, both in men and in animals, when they are fed upon it, is well understood. The founders of various religious orders, and saints, prophets, and reformers in all ages, have recognized this fact, and have endorsed it.

Wherever flesh eating is most prevalent, drunkenness exists to a proportionate degree. The use of meat inflames the mucous coat of the stomach, and thus produces irritation of the nervous system,

which results in a craving for stimulation, and is known to be a predisposing cause of drunkenness. Physicians and prominent temperance workers have realized this, as they find that nearly all vegetarians are abstainers from choice, and that scarcely a vegetarian drunkard can be found. Throughout the Holy Scriptures, the eating of flesh and the drinking of wine are often associated together.[3]

As a result of the stimulating qualities of meats, persons who partake of animal foods, often feel a craving for food soon after a meal. Such a craving, being generally interpreted as hunger, may be regarded as one of the principal causes of overeating, which is one of the most prevalent as well as the most harmful of dietetic indiscretions. Meat eaters, therefore, are found to partake of more meals a day than do vegetarians. Among the millions of Asiatics, a quite general rule is said to be two meals a day, and often only one; whereas in countries where meat eating is prevalent, "three square meals" a day may be considered the minimum, while four or five a day are common.

CRUELTY OF FLESH EATING

There is another aspect of the subject which deserves the earnest and thoughtful consideration of Christians, from the standpoint of humanitarian principle. It must be admitted that the custom of eating flesh involves the infliction of an incalculable amount of suffering upon millions of God's helpless creatures. Such wholesale procedure in the taking of animal life is wholly unjustifiable, except on the ground of absolute necessity. As this necessity does not exist, the practice of these cruelties appears to be a violation of Christian principle, that of showing mercy to the defenseless. Any person who would visit a real slaughterhouse, and watch the tragedies enacted daily, upon cattle, sheep, and hogs, could but be moved with horror at the cold-blooded, businesslike cruelty.

By those who prize the development of a Christlike character, who aspire to reach the best and noblest that is possible to man, it

[3] Isaiah 22:12, 13; Proverbs 23:20.

should be borne in mind that the path of self-denial, trodden for conscience' sake, is the most direct route to the accomplishment of that purpose; that the laws of our physical being demand our reverence as truly as the law given on Mount Sinai; and that perfect love is incompatible with the perpetration of unnecessary cruelty.

Vegetarianism is not a fad. It is a great system of diet, based on scientific principles, and when adopted, insures a clearness of mind and a restfulness of spirit which make for renewed strength and a fitness for life's duties. It is full of promise for bettering the spiritual, physical, and economic conditions of both men and nations.

V. BALANCING THE FOOD

"Of right choice of food are his meals, I ween."

LATENT energy is just as surely found in foods as in wood and coal. Like them, foods are only waiting to be oxidized that they may be converted into heat and energy. The fuel value of foods is expressed in heat units. This is determined by their oxidation outside the body in the apparatus known as the bomb-calorimeter.

The calorie is the unit measure of heat used to denote the energy-giving power of food, and is equivalent to the amount of heat necessary to raise the temperature of one kilogram of water one degree centigrade, or about one pint of water four degrees Fahrenheit. The following general estimate has been made for the energy furnished to the body by one gram of each of the different classes of nutrients:

1 gram[1] protein yields 4 calories of fuel value.
1 gram carbohydrate yields 4 calories of fuel value.
1 gram of fat yields 9 calories of fuel value.
—*Bulletin No. 142, United States Department of Agriculture.*

By the figures at the right of the chart is represented the total number of calories, or food units, contained in one pound of the various foods under consideration, the building material (protein) being represented by the diagonal lines, the fats by the dotted space, and the carbohydrates by the crosshatching.

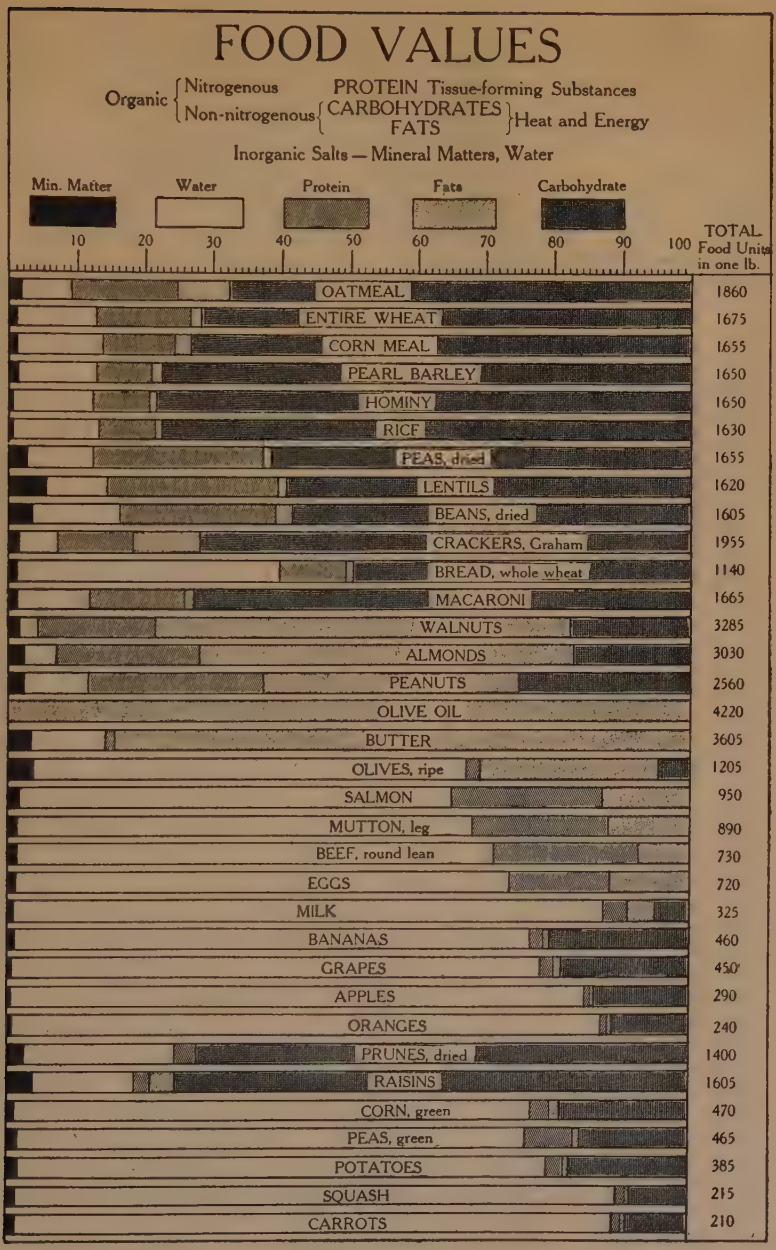
[1] 28.3 grams equal 1 ounce.

From this chart, it will be seen that the most abundant element of grains, legumes, fruits, and vegetables is carbohydrate, while fats predominate in the nuts, protein also being large; and that protein is the chief element in animal flesh, fish, and eggs, there being no carbohydrate at all in these. The carbohydrate of milk consists of milk sugar, no starch being present.

Careful experiments have demonstrated that the body is best sustained in health, strength, and endurance by a diet containing a proportion of about one ounce of protein to nine ounces of carbohydrate and fat. In an approximate day's ration of 3,000 calories, 10%, or about 300 calories, should be protein. The remainder, or 90%, may be divided, according to individual need or personal preference, between carbohydrates and fats, provided some of each is used. About 25% of fat and 65% of carbohydrate is considered a good proportion. As to the protein requirement in a day's ration, a well recognized authority on the subject has the following to say:

"Foods should be so selected as to give the ration the right amount of protein, or repair foods, on the one hand, and of fats and carbohydrates, or fuel foods, on the other. A certain amount of protein is absolutely essential. . . . The right proportion of protein has been the subject of much controversy. According to what are regarded as the best investigations, it is generally about 10% of the total number of heat units consumed. This does not, of course, mean 10% of the total weight, nor 10% of the total bulk, but 10% of the total nutriment; that is, ten calories of protein out of every one hundred calories of food.

"Most persons in America eat much more protein than this. But that ten calories out of every one hundred is not too small an allowance is evidenced by the analysis of human milk. The growing infant needs the maximum proportion of protein. . . . Consequently an analysis of human mothers' milk affords a clue to the maximum protein suitable for human beings. Of this milk, seven calories out of every one hundred calories are protein. If all protein were as thoroughly utilized as milk protein or meat protein, seven calories out of one hundred would be ample; but


FOOD VALUES
Organic
Nitrogenous
Non-nitrogenous
PROTEIN Tissue-forming Substances
CARBOHYDRATES
FATS
Heat and Energy
Inorganic Salts — Mineral Matters, Water
Min. Matter
Water
Protein
Fats
Carbohydrate
10
20
30
40
50
60
70
80
90
100
TOTAL Food Units in one lb.
OATMEAL 1860
ENTIRE WHEAT 1675
CORN MEAL 1655
PEARL BARLEY 1650
HOMINY 1650
RICE 1630
PEAS, dried 1655
LENTILS 1620
BEANS, dried 1605
CRACKERS, Graham 1955
BREAD, whole wheat 1140
MACARONI 1665
WALNUTS 3285
ALMONDS 3030
PEANUTS 2560
OLIVE OIL 4220
BUTTER 3605
OLIVES, ripe 1205
SALMON 950
MUTTON, leg 890
BEEF, round lean 730
EGGS 720
MILK 325
BANANAS 460
GRAPES 450
APPLES 290
ORANGES 240
PRUNES, dried 1400
RAISINS 1605
CORN, green 470
PEAS, green 465
POTATOES 385
SQUASH 215
CARROTS 210

all vegetable proteins are not so completely available. Making proper allowance for this fact, we reach the conclusion that ten calories out of every one hundred are sufficient."—*"How to Live," by Professor Irving Fisher and Lyman Fisk, pages 36, 38.*

The fact that protein is absolutely essential for the growth and repair of the body — there being no other food principle that can take its place in furnishing muscle-building material — has a tendency to lead people to believe that they might be benefited by the consumption of large quantities of protein foods, when the fact is that the body can use but a limited amount for the development and repair of tissue.

Proteins cannot be stored up in the body for future use, as can the carbohydrates and the fats; therefore any excess of protein must be eliminated, at great expense to the vitality of the system. Flesh meat is very high in protein, and contains no carbohydrate. Notwithstanding this, many persons have been accustomed to look upon flesh meat as the backbone of the meal, thus increasing the danger from excess of nitrogenous material. In the vegetable kingdom, the food elements are so combined that the protein average is low. In other words, when we combine the nutritious grains with the bulky vegetables, or the juicy fruits with the concentrated pecan or walnut, the diet is already balanced.

Although protein, when oxidized in the body, is capable of yielding a certain amount of heat, it is inferior for this purpose to carbohydrates and fats, because, on being burned in the body, it also yields certain deleterious products, which throw upon the liver and the kidneys an unnecessary amount of labor, thus weakening them and rendering them more susceptible to the attacks of disease. Many of the ailments so prevalent to-day, such as rheumatism, gout, gastrointestinal disturbances, indigestion, and liver troubles, have been found to be closely associated with the habitual overeating of protein foods.

We would not, however, recommend the measuring and weighing of the foods eaten, in order to be sure of exact proportions. If natural, unprocessed foods, containing all their mineral salts and essential vitamines, are eaten intelligently, with regularity in meals, the calories will take care of themselves.

VI.

FOOD ECONOMICS

"Economy is not saving but wisely spending."—Ruskin.

The problem of securing proper nutriment for the family board, and securing it at a minimum cost, is one of constantly growing importance, not only because of the rise in prices of all classes of foodstuffs, but because more and more we are coming to realize that a healthy body is man's greatest asset. How, then, to satisfy the physical needs, and furnish a ration that shall be palatable, digestible, liberal in quantity, and still come within the purchasing power of the family, is a most important problem of economy.

Aside from the inherent value of the more watery foods, such as fruits, vegetables, etc., due to their richness in mineral salts, vitamines, and essential oils, it must be considered that the economic value of a food depends largely upon its capacity for producing energy; hence the need of a practical knowledge of food values. When one realizes that the market price of a food is no indication of its food value, the importance of such knowledge is more keenly appreciated. The most expensive food is not necessarily the most nutritious. True economy contemplates not only the cheapness of the food purchased, but also its adaptation.

It aims at supplying a diet that furnishes all the elements of nutrition at a minimum cost, with due recognition of the æsthetic qualities. The ideal is found in many of the simple foods at hand every day, as for instance the grains and the grain products, including whole meal bread, corn meal, natural rice, macaroni, etc.; also in legumes, as dried peas, beans, lentils, etc.; in the immature green vegetables, as corn, peas, string beans, and the like. Add to these the various dairy products,— milk, cream, eggs, etc.,—

and there is a large variety from which to choose a diet of non-irritating and easily digested foods, which take the lead as a source of nourishment, both from the economic and also from the health point of view.

By comparison of the chemical analyses of various foods bought for a particular sum, this truth becomes self-evident. We find that 50 cents spent for round steak (lean), at 30 cents a pound, gives food to the value of 1,116 food units; 50 cents invested in salmon trout, at 40 cents a pound, buys 481 units; spent for oysters, at 60 cents a quart, it yields only 383 units. The same amount for potatoes, at 5 cents a pound, obtains 3,100 units; spent for corn meal, at 8 cents a pound, it obtains 10,346 units; the same for wheat flour, at 9 cents a pound, buys 9,213 units; and in the form of well baked bread, ready for use, 5,700 units. In the face of these figures, may we not well stop, and consider what we shall buy for the family board?

Protein, being the most costly of the food elements, is the one often lacking in inexpensive meals, although generally used to excess by those who can afford it. Skim milk, with its products, is one of the cheapest sources of protein at the present time. Practically all of the protein, sugar, and mineral contained in milk, is found in that part which remains after the cream has been removed. When made into cottage cheese, each gallon of such milk should furnish about one and a half pounds of cottage cheese. In each pound of cottage cheese there is about one fifth pound of protein, nearly all of which is digestible. According to the Bulletin of the Los Angeles Department of Health, June, 1917, cottage cheese is much cheaper than most meats in furnishing protein; for we are told that as a source of protein, one pound of cottage cheese equals:

1.27 pounds of sirloin steak	1.09 pounds of round steak
1.31 pounds leg of lamb	1.52 pounds of fowl
1.37 pounds breast of veal	1.58 pounds loin of pork

For supplying excessive amounts of protein, the soy bean takes the lead among vegetable foods, containing about twice the per cent found in round steak. Peas, all beans, and lentils like-

COMPARATIVE FOOD VALUES

Calories of Protein and Total Calories Obtainable for 50 Cents in Some General Articles of Diet

Articles (As Purchased)	*Price*	*50c will buy Pounds*	*Calories Protein*	*Total Calories*
Corn Meal (granular)	8c a lb.	6¼	1,039	10,346
Oatmeal	10c a lb.	5	1,455	9,300
Flour (entire wheat)	9c a lb.	5½	1,372	9,213
Beans (dried brown)	10c a lb.	5	1,980	8,375
Bread (whole wheat)	15c a loaf	5	876	5,700
Macaroni	15c a lb.	3⅓	807	5,550
Peas (dried)	15c a lb.	3⅓	1,483	5,517
Rice	15c a lb.	3⅓	482	5,433
Crackers (Graham)	20c a lb.	2½	452	4,888
Potatoes	5c a lb.	10	325	3,100
Raisins	25c a lb.	2	83	2,890
Butter	75c a lb.	⅔	12	2,403
Prunes (dried)	25c a lb.	2	65	2,380
Milk	15c a qt.	6⅝	395	2,153
Almonds	40c a lb.	1¼	260	2,075
Apples	10c a lb.	5	27	1,100
Beef (round, lean)	30c a lb.	1⅔	560	1,116
Eggs	60c a doz.	1+	224	661
Salmon Trout	40c a lb.	1¼	206	481
Oysters (solids)	60c a qt.	1⅔	181	383

Counting the Sheep

wise are very high in protein; also most of the nuts. These heavy foods should be used with caution, especially during the spring and summer months, when well baked cereal breads and green garden products constitute the ideal diet.

That the use of meat is poor economy is shown by the fact that the practice of raising and feeding animals for human food is extravagant, both in the amount of land needed for pasturage, and in the labor required for herding, stabling, care, transportation, etc. As a comparison between the productive power of land under pasturage and under the plow, the following statistics and comment from an eminent authority are given:[1]

100 acres devoted to sheep raising would support 42 men: proportion, 1
100 acres devoted to dairy farming would support 53 men: proportion, 1¼
100 acres devoted to wheat would support 250 men: proportion, 6
100 acres devoted to potatoes would support 683 men: proportion, 16

Mr. Powell states further: "If only 20,000,000 of the 35,000,000 acres now devoted to grazing in the British Isles were brought under wheat, then at a moderate estimate the wheat so produced would support 40,000,000 people. The British Isles could therefore produce sufficient food to support the whole population, if the latter were vegetarians instead of flesh eaters."

[1] "Food and Health," by A. E. Powell, lieutenant Royal Engineers, quoting Dr. Francis Newman, professor of University College, London, England.

VII.

COOKERY AND FOOD PREPARATION

"Food well cooked is partially digested."

Cooking is the application of heat to foods, to render them more digestible and better fitted to nourish the system. There are comparatively few foods that are at their best when taken in their raw state. They neither taste so good nor are so easily digested as when subjected to some kind of cooking.

The nutritive value of many foods depends upon how they are cooked. Many articles that, owing to their chemical condition or other cause, are unfit for nourishment when raw, are very nutritious when cooked. The direct application of heat changes the taste, odor, and digestibility of nearly all foods, and changes the food elements (with the exception of fats) in much the same way as do the digestive juices. Many inexpensive articles and "left overs," if carefully prepared and attractively served, are just as appetizing as the more expensive foods, and are usually quite as nutritious.

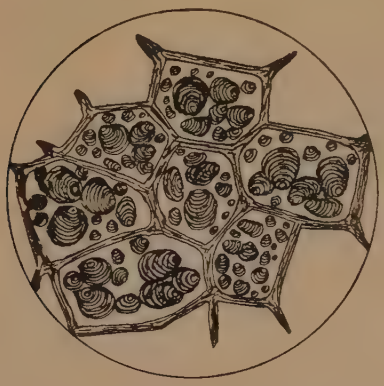
OBJECTS SOUGHT IN COOKING

There are three chief objects sought in cooking. The *first* is to change the mechanical condition of food so as to make it more digestible. The *second* is to develop its flavors, thus conserving its nourishment and making it more palatable and inviting. The *third* is to kill, by heat, any disease germs, parasites, or other dangerous organisms it may contain.

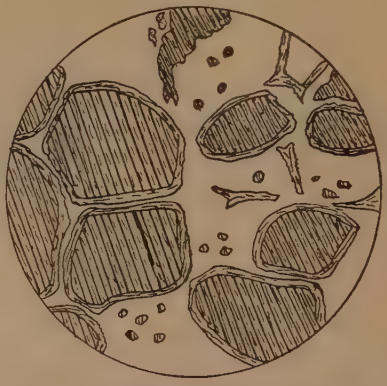
Boiled starch is soluble, and is acted upon by the saliva in mastication, which changes it to dextrin. This process is forwarded by the organs of digestion to maltose, dextrose, blood, etc. Raw starch is insoluble, and is not acted upon by the saliva, and only in small quantities by the intestinal fluids. So in order for

man to appropriate it, the woody envelope that incloses the starch granule must be broken, by being subjected to dry or moist heat, as illustrated in the following cuts.

CHANGES OF STARCH CELLS IN COOKING



Cells of raw potato, showing the unruptured starch grains and cellulose framework intact.



Cells of thoroughly boiled potato, with cellulose framework broken down, and the starch grains a mass.

—*Adapted from Farmers' Bulletin No. 295, United States Department of Agriculture.*

When put into boiling water, the cellulose surrounding the starch grains breaks, setting free the granulose, which takes up the water, forming a thick, transparent mass. Water has little effect on starch granules until this cellulose covering has been thus broken. The softening and rupture of the cellulose framework of vegetable cells, allowing the starch grains to become jelly-like, is one of the chief aims sought in the cooking of vegetable foods.

Ripe fruits, on the other hand, have been virtually cooked on the tree, and are best when eaten thus, without being subjected to artificial heat. The carbohydrate of fruit in its unripe state is in the form of raw starch. As the fruit ripens, this starch is changed to sugar, and is practically ready to be absorbed by the digestive organs. The same is true of tomato. Thus no cooking is required for ripe fruits, except to preserve them for future use,

by canning, etc. It is with starch that cooking has most to do, as starch in its raw state cannot be utilized by the body, and it is the most abundant of all food elements.

In the *second* object, development of food flavors, the preservation of the mineral salts and vitamines is of paramount importance. The manner in which fresh vegetables are often cooked deprives them of a large part of these essential constituents, and thus robs them of their characteristic flavors. This has special reference to the boiling of vegetables in water, throwing the water away, and then serving up the more or less insipid residue.

When tea was first introduced into England, a certain peddler (so the story is told) called at a farmer's house and sold half a pound of tea to the wife. About a month later he called to ask her how she liked it. She told him they did not like it at all. Then he asked her how she had prepared it. She said she had boiled it like cabbage and had thrown the water away, but that they "could not eat the stuff!" All very good, perhaps, in the case of tea; but unfortunately, many people treat vegetables in the same way. The important inorganic salts and mineral substances so abundant in fresh vegetables are more or less drawn out into the water in which the vegetables are cooked. When this is thrown away, a most valuable part of the food is wasted. The same treatment is often given to cereals and legumes; after being boiled in a large quantity of water, they are drained, and the water is allowed to run down the drain pipe of the sink.

For this same reason, the potato is far more nutritious if baked or boiled in the skins. The carrot, when scraped, sliced thin, and allowed to simmer until the liquid is mostly evaporated, will have a delicate yellowish color and pleasant flavor, with its salts and minerals conserved.

Most of the succulent vegetables are best when steamed, or cooked in only sufficient water to make them tender; and the remaining liquid should be regarded as the most essential part of the food. When vegetables are thus cooked conservatively — that is, in such a way as to retain their juices — they possess a far richer flavor than when deprived of their juices by swimming in

Photo Eugene Hall

EARLY GARDENING

a large quantity of water. To this rule, there are a few exceptions. Old cabbage, for instance, is likely to have a strong flavor and a dark color if cooked by this method; but if the leaves are pulled apart and then dropped into deep boiling water, they will retain their delicate green color and will have a mild flavor in contrast to the dark color and strong flavor that result when it is cooked in compact form or in large pieces. When cabbage is very tender and crisp, if shredded fine, it may be cooked in a covered vessel, with the addition of a little vegetable butter, and no water, the vessel being covered, and the cabbage stirred often. The moisture in the vegetable is sufficient.

During the cooking of green vegetables, such as new peas, string beans, etc., the cover should be drawn a little to one side of the stewpan or kettle, so as to allow the escape of the steam, which is laden with volatile bodies that will, if retained, impart to the vegetable a strong flavor and a dark color.

Mustard greens, beet and turnip tops, spinach, etc., after being washed in several waters to remove grit, should be put to cook in deep boiling water with the *cover off*. The reason why greens, especially those well grown, require more water in the cooking than ordinary succulent vegetables, is that in growing for some time exposed to the sun, they develop a bitter flavor, and this is largely extracted by this manner of cooking. When spinach is very tender, it may be cooked with no additional water beyond that remaining on the leaves after washing. During the cooking, it should be turned over occasionally with a fork or a spoon, the saucepan being covered, to inclose the steam. It will require but a few minutes' cooking. Serve without chopping.

Fresh vegetables should be thoroughly cooked, but the cooking should stop when the vegetable is yet firm. Overcooking toughens the texture of vegetable foods, destroys the coloring matters, and injures the mineral bodies that contribute to their flavor and nutriment. Vegetables should be allowed to boil slowly during the cooking process, as rapid boiling tends to chip off the surface of the food, making it less palatable, and causing a loss in nutriment. Rapid boiling hardens some foods; for instance, green corn, which

should be put into boiling water, brought to the boiling point, and then drawn to the side of the stove for twenty minutes.

A most valuable form of vegetable food is raw green stuff, containing the organic salts unchanged by heating. This includes such foods as lettuce, water cress, celery, cabbage, radishes, cucumbers, and ground, chopped, or diced raw vegetable salads. In these, the cellulose is best when eaten crisp; and their mineral salts, largely lost in cooking, are preserved.

The *third* object of cooking is the destruction of disease germs or other dangerous organisms that may be present. Vegetables and some fruits may become contaminated with the eggs of parasites from fertilizers applied to them. Hence raw fruits and vegetables should always be thoroughly washed before they are served, if there is any doubt as to their cleanliness.

The bacteria of typhoid fever sometimes find their way into drinking water, and those of typhoid and diphtheria into milk, bringing disease and death to many. Thus food and drink may become dangerous purveyors of disease. When food and drink are sufficiently heated in cooking, all organisms are killed.

VIII.

PRINCIPLES OF SUCCESSFUL COOKERY

"Civilized man cannot live without cooks."

THE two fundamental principles of successful cookery are: first, *simplicity;* second, *appetizing serving.* The meaning of simplicity in this connection is, to conserve and develop the natural flavors of the particular food under hand, and not to confuse it with so many foreign substances as to make the whole a nameless mixture.

The Creator has placed in each food certain delicate flavors and attractive colors, which may be preserved in the food by proper cooking. A great lack of judgment is often observed in the way different foods are mixed together without regard to the effect of the flavor of one food upon the other; likewise in the addition of large quantities of strong flavored substances, such as bay leaf, sage, thyme, and onion, to foods of delicate flavor, whereby the identity of the food is largely lost.

A sprinkle of onion flavor with the potato, in making potato soup, adds greatly to its palatability; but a little too much onion will so cover up the delicate flavor of the potato as to make the soup a disappointment. Cream and tomato combined make a very palatable and nourishing soup, and the combination is agreeable. By the addition of fried bones, onion, and spices, however, the tomato flavor is so predominated by the stronger flavors as to make

the soup a sort of nondescript, and consequently not in harmony with that simplicity in cookery which specializes on the development and conservation of those delicate flavors in food which are really satisfying to the natural taste.

The close affinity that exists between coloring matter in vegetable foods and their flavors, precludes any thought of retaining the one without the presence of the other. In order that the green color in fresh vegetables may be preserved, they should be put to cook in boiling water; for this seals up the cells, as it were, and prevents the escape of much of the valuable salts and coloring matter. And the water should be kept boiling continuously until the food is done. Cold water, when added to fresh vegetables in cooking, extracts both color and flavor from the food, leaving it more or less insipid to the taste. Exception is made in the making of soups and vegetable stews, where the object is to extract the flavors into the broth or the gravy.

The second factor in successful cookery is *appetizing serving*. Palatability is one of the first essentials in nutrition. No matter how wholesome the food may be, one must relish it in order to be fully benefited thereby. The meals should be made to please not only the sense of taste, but all the senses if possible. While it is unwise to use harmful and highly seasoned foods, we must recognize the need of providing foods that please the sense of taste, sight, and smell, as these all have a very direct bearing upon the digestion of food.

It is a well established fact that all the juices which aid the digestive processes are called forth at sight of food that is appetizingly and attractively served. The simple garnitures which all may employ,— a sprig of green, a friendly flower, contrast in color and design,— and care to provide clean linen and appropriate dishes for serving, will greatly enhance the pleasure of the children and the grown-ups at the family board.

God has provided for our eyes fruits and flowers in the most attractive designs and colors. The wonderful hues and tints of the fruits that are "good for food" tempt us to enjoy their delightful flavors. If, however, foods are served with spots of bruise in

evidence, or revealing rough, untrimmed surfaces, or in cracked dishes, or otherwise out of harmony, wherein lies the inducement to partake of and appropriate these foods to the needs of the body?

"God *saw* everything that He had made, and, behold, it was very good." Genesis 1:31. His injunction to us, "Eat ye that which is good," calls our attention to the reason as well. We are made of that which we eat. Our food becomes our lifeblood. It should therefore be pure and palatable. It should be served attractively, that it may best offer to the human body the nutrition its elements contain.

Hence there is the utmost need that sufficient time be given to the preparation and careful service of the daily food, since this is to become the life of these human temples God has given.

PRACTICAL HINTS

Careful planning, so as to avoid wastage, is one of the first steps in the attainment of successful household management. It has been estimated that from 15% to 20% of all foods going into American kitchens is wasted. A few suggestions as to how the housewife may avoid a needless waste of food material in its care and preparation may be of interest.

In the first place, there should be care in the outlay, with freedom from extravagance. Plan the meals from a select variety of only a few kinds of food, avoiding a large array of hearty and more expensive foods, which are not needed, and a great deal of which would be left over at the end of the meal. Preference should be given to the simpler and more inexpensive yet wholesome foods that are at hand every day.

All foods left over should be reheated before there is the first sign of spoiling. Many foods gain richness in reheating. No food should be left adhering to the kettles in which they were cooked. All fragments should be carefully saved and utilized.

Unbolted corn meal for bread and porridge requires less fat and sweetening than the commercially prepared meal, and is far more tasty and nutritious. Cracked wheat and natural brown rice are excellent breakfast cereals, and should supplant the white, de-

Enough, but none to waste.

vitamined foods commonly used, which are not adapted to the making of healthy blood and tissue.

Vegetables should not be pared too thickly. Neither should the water from cooked vegetables be thrown away; it contains valuable salts, and should be saved, as it may be used for various purposes. Rice cooked in spinach water or other vegetable broth, and seasoned with a little butter and salt, is excellent.

An admirable plan is to keep a soup pot into which clean potato parings, carrot, turnip, and beet tops, cabbage, lettuce, and other odds and ends of vegetables which are usually thrown away, may be put and allowed to simmer on a slow fire for a number of hours. Most of the salts will in this way be extracted and may be served up as soup, or as the foundation of various soups and

gravies. Such soups and sauces will be found palatable, and are certainly of great dietetic value on account of their richness in salts.

Beets, if cooked the day before they are used, will have far better color than when cooked fresh and served immediately. The water from beet greens, if cooked down until almost thick, is excellent for coloring vegetable soups and gravies. Red onion skins, while they have scarcely any flavor, are rich in coloring matter, and give a nice brown color to soups or gravies, and should be kept in a glass jar for use as needed.

Lettuce and celery may be kept by first wrapping them in dry paper, then wringing another paper or cloth out of water and wrapping it around the outside, and keeping in a dark place.

Bread crusts should not be left to accumulate for too long a time, but should be used for making an entrée, or simple pudding with raisins; or they may be put into the warming oven and thoroughly dried, ground through a food mill, and kept for various uses.

Thought should be given to the purchase and care of perishable foods. Overripe fruit, if purchased at all, should be used immediately. Raw fruit kept in store should be examined often for the purpose of discarding any that may have begun to decay. Lemons should be wrapped, or laid on a shelf, space being left between, that they may not so readily mold.

The successful housewife appreciates the value of quality, and consequently does not depend on the telephone when laying in supplies, but insists on observing the old rule of *"Caveat emptor"* (Let the buyer beware), thus being better able to keep the service at the table up to par, and the expenses down.

Lastly, "preach the gospel of the clean plate." Persons differ in their tastes and capacity for food; therefore too large a portion should not be served at the first serving, otherwise, good food which might have been saved finds its way into the garbage can. Moderate portions, with a second serving if desired, are always in good taste.

IX. FOOD COMBINATIONS

"The stomach crammed from every dish
Of roast and fowl, and flesh and fish,
Where wind and phlegm and acid jar,
And all the man is one intestine war,
Longs oft the schoolboy's simple fare,
The restful sleep, and spirits light as air."

When we learn that health and strength come to us from the food digested, rather than from the amount eaten, more attention will be given to the quantity and quality taken, and the harmonious agreement of foods one with the other. The body must receive its due share of growth and repair foods, the proteins; there must be the proper proportion of carbohydrates and fat, producers of heat and energy; blended with these, there must be such mineral matters as are necessary for the building and repair of the bones and the teeth, and a proper bulk to stimulate active elimination.

Not only does the body need all these elements, but for perfect health, they must be taken into the stomach in *right chemical combinations.* One may as well expect a wolf and a lamb to lie down together in peace, as to put warring food elements into the stomach and look for rest and the blessings of peace. Many a person who thinks that a certain food does not agree with him, may find that the trouble is not with the food, but in the fact that the foods eaten have disagreed with one another. Many foods which in themselves are good, may become actually poisonous if mixed indiscriminately with a number of other foods, and produce fermentation, gas, and other ills, leading to more or less serious consequences.

W. O. Atwater, Ph. D., nutrition expert of the experiment station, Department of Agriculture, Washington, D. C., writes to the point as follows:

"How much harm is done by the injurious compounds sometimes formed from ordinary wholesome foods is seldom realized. Physiological chemistry is revealing the fact that these compounds may affect even the brain and nerves, and that some forms of insanity are caused by products formed by the abnormal transformations of food and body material."— *Farmers' Bulletin, No. 142.*

Many a fond mother praying for the health and happiness of her children, may take the issue out of God's hand, so to speak,

by unthinkingly permitting the indulgence of capricious appetite, which sows the seeds of ill health, with the misery and life failure that must inevitably follow. Many a woman, perhaps devoted to the cause of temperance, is unwittingly a party to the manufacture of alcohol in one of its most mischievous forms, at her own table.

The truth of it is, though often forgotten or not understood, that to put a random blending of fruits, vegetables, starches, and sweets into the warm confines of the stomach, causes them to ferment and develop alcohol there, no less than in the brewer's vat. The effect upon the body is similar to that upon the brain when distilled liquor is taken; the drunken cells are unable to perform their proper functions, and auto-intoxication is produced, often leading to various forms of disease.

As a usual thing, the simpler the meal, the better it is for the health. A few dishes, each perfect of its kind, and all in harmony, are far better than the serving of many courses, with the menace of a superfluous quantity. Dr. Alexander Haig says on this point, *"I may say also, that simple food of not more than two or three kinds at one meal is another secret of health."—"Diet and Food," page 89.*

GOOD COMBINATIONS OF FOODS

Cereals combine well with all other foods.
Nuts combine well with all other foods.
Eggs combine well with all other foods.
Fruits combine well with cereals and nuts.
Vegetables combine well with cereals and nuts.
Milk combines well with cereals.

POOR COMBINATIONS OF FOOD

Acids and starches mixed before mastication.
Fruits and vegetables, especially the coarser kinds of vegetables.
Sugar and milk together in excess.
Foods cooked (soaked) in fats.

ACIDS AND STARCHES

While fruits and cereals combine well when taken at the same meal, a careful study of the physiology of digestion shows the

wisdom of submitting all starchy foods to thorough mouth treatment before they are mixed with acids of any kind. Starches are dependent upon the action of saliva for their proper digestion. There are three sets of glands which secrete saliva,—the sublingual, the submaxillary, and the parotid. The first two sets are under the tongue, at the sides and in front, and they serve to keep the mouth moist, but are said to be of little aid in the digestion of starches. The third, or parotid gland is just below and in front of the ears, and contains the serous secretion in which we find the ptyalin that acts upon starches. When starchy food is chewed, this secretion flows freely, unless acid is mixed with it, in which case this part of the digestion is interfered with. A strong acid reaction retards or prevents the action of ptyalin on starches. Hence it would seem best not to mix them with acid, or with acid fruits, before mastication.

The following is from a well-known authoritative text on physiology:

"The most marked influence [in retarding starch digestion] is exerted by acids. Free hydrochloric acid to the extent of only 0.003% *(Chittenden)* is sufficient to stop the amylolytic action of the enzyme (the converting of starch into sugar), and a slight further increase in acidity not only stops the action, but also destroys the enzyme."—*"Howell's Physiology," sixth edition, page 767.*

It should be remembered in this connection, however, that "free hydrochloric acid" is an inorganic acid, and consequently much stronger than the organic acids found in fruits. Nevertheless, when fruit juices are mixed with soluble starches (cereals cooked in water or steam) in the same manner as milk is used with them, they tend to interfere with the ptyalin, and fermentation quite naturally results.

A question often arises in regard to the cooking of certain starchy foods and acids together, as in Spanish rice, fruit toast, macaroni in tomato, lemon pie, etc. But this procedure is justifiable when these dishes are properly compounded. The rice for this entrée is to be cooked to a light brown over a dry heat before it is added to the tomato sauce, and this partially changes the

starch of the rice to dextrin before it is brought into contact with the acid. Likewise in the making of fruit toast, zwieback, or bread twice baked, is used, and thus the starch is partially predigested before it is mixed with acid.

As to the use of macaroni in tomato, and of starch in the making of lemon pie, it will be recognized that these dishes, to be palatable, require a moderate proportion of fat; and the rich sauce on the macaroni, and the free fat added to the lemon pie, serve to neutralize the acid effect, in the same manner as cream neutralizes the action of the acid of tomato in cream of tomato soup. Fats, moreover, tend to lessen the secretion of hydrochloric acid in the stomach; and for this reason, persons who cannot tolerate the acid of fresh or stewed tomato, often experience no trouble whatever in taking it in the form of cream soup.

When soluble starches are thoroughly mixed with saliva, their digestion continues for a length of time after the food enters the stomach. The acid from the glands of the stomach penetrates the mass of food only gradually; but when the contents of the stomach have become acidified, starch digestion ceases there. This emphasizes the need of thorough mouth treatment of all starchy foods, in order that they may be properly acted upon by the ptyalin of saliva before the stomach is made too acid for their proper digestion.

FRUITS AND VEGETABLES

To mix fruits and vegetables (especially the coarser vegetables, such as beets, turnips, onions, boiled cabbage, etc.) at the same meal is never advisable; not only with respect to the blending of acids with starchy vegetables, but because of the differing periods of time required for their digestion. Fruits, as a rule, are very quickly digested, a sweet apple requiring but a little more than an hour, while a heavy vegetable, such as boiled cabbage, requires from four to six hours. When these are mixed together in the stomach, the lengthy process of vegetable digestion serves to detain the fruit mixture beyond its normal limit, until fermentation naturally results.

"It is better to have the fruit at one meal, and vegetables at another."— *White.*

SUGAR AND MILK IN EXCESS

"Large quantities of milk and sugar eaten together are injurious." "Sugar clogs the system. It hinders the working of the living machine."—*White.*

Sugar as eaten in beets or in sugar cane is a natural food, and wholesome; but when taken in the concentrated form of our modern white sugar of commerce, it is an artificial product, and its free use is a positive injury to the system. It favors fermentation, and is an intestinal irritant. Until about the eighteenth century, this sugar was sold only in drug stores, being used principally in the making of medicine. Now an average of about eighty-five pounds per capita is used in the United States annually.

The free use of refined sugar is said to be the cause of an excessive secretion of hydrochloric acid. Intestinal catarrh, which often leads to appendicitis, is traceable to the free use of white sugar, sometimes spoken of by well-known physicians as "solid alcohol." During the great sugar shortage of 1918, pellagra is said to have dropped off throughout the South, to such an extent that the free use of sugar was shown to have been a contributing cause of the disease. The adding of much sugar to mushes, with milk, or its too free use in puddings and cakes, makes them unwholesome in proportion to the excess added.

As to the evil effects following the use of a combination of *milk and sugar,* some very practical tests carried out in an up-to-date physiology laboratory, brought to light the following interesting facts:

1. That sugar is a distinct intestinal irritant; and the stomach, in an effort to protect itself from injury, produces large amounts of mucus. The amount of mucus produced varies with the sugar concentration in the stomach.

2. That this mucus combines readily with the hydrochloric acid of the gastric juice, and thus prevents the normal activity of gastric juice upon substances requiring gastric digestion when they are present in the stomach.

3. That when sugar and milk are taken together, the digestion of the protein of the milk is greatly delayed because of the presence of mucus resulting from stimulation of the glands by cane sugar.

4. That this mucus, combining with the acid, delays the action of the gastric juice on protein. Thus the materials present in the stomach, remaining for an abnormally long time, are likely to undergo fermentation, and cause definite gastric distress.

The sugar originally designed for human consumption was fruit sugar. It is served by nature in a dilute form, and requires practically no digesting, needing only to be absorbed. It does not tax or derange the organs of digestion, but furnishes a form of nutriment that can be utilized by almost every one, even by those whose digestive powers have become weakened. Persons who partake freely of those sweets will not greatly desire the artificial.

FREE FATS IN COOKING

The question of the use of free fats in cooking should receive careful and thoughtful consideration, inasmuch as any extreme course in either direction is fraught with consequences that are detrimental to health. Many of the edible plants are deficient in the fat element; and instinctively, it would seem, man puts cream or butter on his bread. Fresh vegetables, while they have their delicate and characteristic flavors, taste "flat" without the addition of a little cream or free fat of some kind.

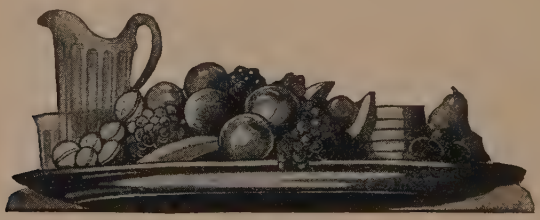
Nature serves fats in the very best form to be utilized by the body; that is, emulsified. These wholesome fats are supplied in nuts and olives, also in the yolk of egg, and in milk and cream. When taken in this form, each minute globule of fat is surrounded with a thin envelope, which holds the fat particles apart, and protects the foods from the free fat, thus permitting them to be readily digested.

Free or neutral fats, if used too freely with meals, have a tendency to smear over the foods, and interfere with their digestion. The prolonged retention of free fats in the stomach favors fermentation and rancidity, often producing heartburn and intestinal catarrh.

Free fats, however, are more digestible when cold than when hot, because hot fats not only coat but intimately penetrate the food with which they are cooked. This is especially true of fried foods, where each part of food is coated with a layer of fat, which keeps the digestive juices from acting on the other food elements.

In the making of gravies where the flour is browned in hot fat before the liquid is added, it is well to bear in mind that when starch granules are so browned and crisped, they are beyond the fermentation stage, and are not inclined to cause distress from that standpoint. It is more particularly the soluble starches (boiled or steamed), being dependent on the ptyalin of saliva for their digestion, that, when soaked in fats, are not acted upon by the saliva, but must wait digestion until they reach the small intestine, where the fats are split up by the pancreatic juice. Thus delayed, they are more or less liable to set up fermentation, while with browned flour, the case is different, as it is less, if at all, liable to ferment.

In seasoning such foods as hash or baked dressing, where the cooked potato in the hash and the soaked bread in the dressing readily absorb fat, and thus tend to make the food difficult of digestion, let the free fat first be used in making a sauce or a gravy, and then add this to the food. In this manner, the fat is not liberated to coat the starch granules, as is the case when free fat by itself is mixed with the starch and baked.



Brazilian
Coffee Pickers

X.

DIETETIC ERRORS

"Now good digestion waits on appetite,
and health on both."

Instinct originally guided man in the choice of foods best suited to his individual necessities, as also in choosing the time most suitable for the taking of such food; but civilization has created for man certain artificial environments, habits, and appetites, in the confusion of which his instincts are largely lost, which makes it incumbent upon him to be guided by rule and reason, rather than by impulse, in these matters.

Certain dietetic indiscretions are set forth here, which, if indulged, would minimize any lasting benefit that might be realized from a strict conformity to rules of combination. These are *hasty eating, eating between meals, too large a variety* at one meal, *overeating, drinking at meals,* and the use of *artificial stimulants.*

Hasty Eating.— Digestion begins in the mouth. But when food is improperly masticated, it enters the stomach with only slight alteration. The ptyalin of saliva is not present in sufficient quantity, under such conditions, to produce any effect on the

preliminary digestion of starches, with the result that the food passes through the duodenum practically unchanged, and in coarse particles, where it is likely to produce irritation. One authority says:

"Although much of the mechanical preparation and mixing of foods is of a necessity done in the stomach, some of it may advantageously be done in the mouth. The stomach should not be required to perform the function of the gizzard of a fowl."—*"Human Foods," page 227.*

Hasty eating, or bolting of food, is a fruitful cause of overeating. The food does not remain in the mouth long enough, under this condition, to give the satisfaction that it gives when thoroughly masticated; so, in an effort to satisfy the craving for food, more is taken than the body requires. This habit leads, moreover, to the taking of too large a quantity in too short a time, which serves to paralyze, as it were, the nerve impulses that communicate with the brain, and as a result, the important message *"Enough"* does not reach the brain until an excess of food has been consumed.

When farinaceous foods (breads, cereals, potato, etc.) are well chewed and intimately mixed with saliva, they are more efficiently digested, and go farther, less food being required than when not well digested. Bread made from the entire grain requires more mastication before it can be swallowed than does spongy white bread, and itself promotes good digestion. Dry foods, which induce mastication, should have a prominent place in the dietary.

Eating Between Meals.— In order to have health and efficiency, the body must be supplied with wholesome food, at regular intervals, and nothing between meals. This is absolutely necessary to insure the secretion of digestive juices for transforming the food into healthy blood and tissue. The glands will then form the habit of pouring out the proper juices into the stomach at mealtimes every day, for nature does everything on time. On the other hand, eating at untimely seasons and between meals leads to the disorder of these delicate glands, so they will not perform their work properly.

It is a general custom to serve the meals too closely together. The stomach should have time to dispose of one meal before another is introduced, with an interval of rest between; because the muscles of the stomach need rest after active work, just as do the muscles of the arm. The glands must have time to become recharged with a good quality of digestive juices. At least five or six hours should intervene between meals.

"If you keep your digestive mill constantly grinding, it will soon wear out."

Large Variety.—The researches of Pavlov brought out the interesting fact that for each kind of food, such as bread, milk, vegetables, meat, fruit, etc., a different kind of digestive juice is required. Hence the wisdom of limiting the number of foods at one meal to a select few. The human body, though intricate and complicated in its structure, is nevertheless very simple in its automatic control when adjusted to its original environment of simplicity in diet. Any tendency toward monotony or sameness in meals may be avoided by having variety at different meals. The following words are to the point:

"A disordered stomach produces a disordered, uncertain state of mind. . . . Many a plan that would have been a blessing to the world has been set aside, many unjust, oppressive, even cruel measures have been carried, as the result of diseased conditions due to wrong habits of eating.

"Here is a suggestion for all whose work is sedentary or chiefly mental; let those who have sufficient moral courage and self-control try it: At each meal take only two or three kinds of simple food, and eat no more than is required to satisfy hunger. Take active exercise every day, and see if you do not receive benefit."—*"Ministry of Healing," page 310.*

The taking of any considerable number of foods at one meal, even though they be not antagonistic to one another, is bound to overtax the digestive organs, and so favor fermentation and poisoning, rather than nourish the system. The *Canadian Confectioner and Baker* says concerning the use of a large variety of food at one meal:

"The reason why there are so many dyspeptics found, is not that we work harder nor even worry more than our fathers did, but we eat too much and too many things. If our grandfathers could only see what we put into our stomachs at a single sitting, they would turn in their graves! Is it any wonder, then, that there is so little real relish for food?"—*Quoted in "Baker's Review," October, 1912.*

Overeating.—*"The feast is worse than the fast"* if it tempts the appetite beyond the legitimate needs of the body, or if it brings together elements that the digestive organs are unable to cope with. Overtaxation of the digestive organs is a bad form of dissipation, and is said to be the cause of more disease, either directly or indirectly, than is caused by all alcoholic dissipation combined. Mr. W. Earl Flinn, well-known lecturer, says on this point:

"It is probable that in most civilized countries more people die because of the failure of the body to eliminate the waste than because of an inability to procure food necessary to sustain life. Most of our ailments, as well as our constant failure to attain our highest physical efficiency, are due to the accumulation of unhealthy waste products which cannot be cleared away by the body machinery."—*Elmira "Star Gazette," November 8, 1911.*

The United States Public Health Service says of the evils of overeating:

"Gluttony, always at fault, is all the more glaring in a land where a plentiful food supply permits it to be more general. The sallow, fat cheeks, the aching joints and irascible temper of the prosperous overfed are far too common."—*"Health News," January 31, 1917.*

Drinking at Meals.—The practice of washing the food down with drink at mealtime is detrimental to health, for well established scientific reasons. It hinders the flow of saliva; it dilutes the gastric juice; encourages poor chewing; causes hasty eating; induces overeating; and when drink is taken cold or iced, stops digestion.

Artificial Stimulants.—Stimulants are great deceivers, because of the immediate effect they have upon the body. By their use, a weak person is temporarily made to feel strong; not because

they impart strength to the body, for this they are unable to do, but because they whip up the flagged energies to increased action. They draw upon the reserve strength, and are but a short cut to physical bankruptcy. As to the deceptive nature of popular stimulants, Dr. Alexander Haig says:

"Stimulation is not strength, but force rendered a little more quickly available, and is invariably followed by an exactly corresponding amount of depression, when the force is used up and must be replaced."

"It has been truly said that the man who relies upon stimulants for strength is lost, for he is drawing upon a reserve fund which is not completely replaced, and physiological bankruptcy must inevitably ensue. This is what stimulants, such as tea, coffee, alcohol, tobacco, opium, and cocaine, do for those who trust in them; they none of them introduce albumen, available for conversion into force and urea, they merely aid in the calling out of the reserves."—*"Diet and Food," pages 40, 123.*

Meat is stimulating, on account of the presence of certain waste and poisonous substances always found in animal flesh. One can get the same exhilaration from a cup of beef tea as from brandy. Wash the excretory products out of meat and it is tasteless and insipid. These artificial stimulants create abnormal appetite, usually mistaken for hunger, with the result that the digestive organs are burdened with a quantity of food which the system will be taxed to dispose of.

About Tea and Coffee.— The effect of the drug caffeine in coffee is to stimulate the nervous system. It removes the sense of fatigue, but cheats the body by producing sleeplessness. Its use is often followed by palpitation of the heart and indigestion. Dr. Harvey W. Wiley is quoted on this point:

"For my part, believing, as I do, in the eternal principles of energy, and that you cannot get something for nothing, I am unable to see how the stimulation produced by a drug like caffeine can secure any energy except at a corresponding expense."

"That caffeine is a lethal poison in not very large doses is thoroughly established by Dr. Slant's work on rabbits, guinea pigs,

cats, and dogs. The evil effects of extensive drinking of coffee and tea are well known to all members of the medical profession." —*"Journal of the American Medical Association," May 11, 1912.*

Dr. Gilman Thompson, professor of medicine in the Cornell University College, New York, says concerning the effects of tea:

"The ill effects of excessive tea drinking . . . the 'tea habit' . . . are referable to its action on the digestive and nervous systems, and are cumulative. If taken in large quantities with meals, tea precipitates the digestive ferments, retards the activity of digestion, and may occasion gastric irritation and catarrh. Constipation usually results. . . . The effect of the 'tea habit' on the nervous system is to overstimulate and then depress it, first producing restlessness, worry, and insomnia, and finally muscular tremors, sensory disturbances, and palpitation."

"In a recent report upon insanity in Ireland, tea is mentioned as a contributing factor."—*"Practical Dietetics," pages 250, 251.*

Dr. Alexander Haig says of tea:

"In taking tea, . . . man is taking pure poison and no nourishment whatever, and with the introduction and diffusion of tea and coffee throughout the land, there has come about a very great increase in all uric acid diseases."—*"Uric Acid in the Causation of Disease," page 804.*

XI.

PLANNING THE MEAL AND MENU MAKING

"It is worth a life effort to lift a man from degradation. To prevent his fall is better."

Since the health and efficiency of the family depend so directly upon what they eat, no study could be more worthy of the housewife's attention than the art of planning harmony in her meals, and this subject should appeal to every thinking mother.

A small amount of food in right combination gives more energy than a large amount poorly combined, just as a small, well disciplined force of arms is more effective in war than an untrained mob. This makes the selection of foods a matter not only of health, but of economics as well; and when the principles of combining foods are rightly understood, very palatable and nutritious meals may be prepared from the most simple and inexpensive foods.

In planning the meal, two great objectives should be kept in view: first, the selection of foods that provide in about the right proportion all the kinds of substances required to nourish the body; second, the selection of foods that agree with one another, as discussed in a previous chapter.

In seeking to balance the food elements in a meal, we should think of foods classified in the following four groups, and choose some article of food from each group at least once a day; then the daily ration is not likely to want for any necessary element. There is nothing mysterious about the planning of most palatable, nutri-

tious, and inexpensive meals. By a study of these groups, one may learn how to substitute one food for another in accordance with palatability and price, and when laying in supplies of food, to consider the question in terms of these groups.

TABLE OF FOOD CLASSIFICATION

1. Foods Rich in Protein:	Milk, skimmed milk, cottage cheese, eggs, nuts, nut foods, dried beans, dried peas, lentils, macaroni, entire wheat, oatmeal.
2. Carbohydrate Foods:	All cereals, breads, crackers, macaroni, breakfast foods, sugar, honey, sirups, fruit, especially dried fruits, potato, other vegetables.
3. Foods Rich in Fats:	Olives, nuts, cream, butter, vegetable oils, solid vegetable fats.
4. Foods Depended on for Mineral Matters and Body-Regulating Substances:	Whole cereals, fruits, whole meal cereal products, entire wheat breads, greens, fresh vegetables, melons, salads (raw green stuff).

Fresh vegetables, especially the coarser kinds, contain a large proportion of water in their composition, and if served by themselves, would fail of supplying proper nutrition to the body. However, when they are served with one of the more solid foods, as grains, nuts, legumes, etc., they furnish a needed bulk to the food, and are rich in mineral and vitamines.

As examples of simple foods that combine well in the making of well balanced meals, take potato, consisting largely of starch, and eggs, which are largely albumen and fat. These balance each other in about the right proportion. Rice, being nearly all starch, and beans, heavy in protein, when taken at the same meal, make an excellent combination. Nuts, being rich in protein and fat, when eaten with fruits, containing sugar and acid, make an excellent balance. If the meal be composed principally of potato or rice (both consisting largely of starch), a few nuts, with ripe olives or a little cream, will supply the needed protein and fat.

In seeking to provide foods that will give proper nourishment to the body, we should avoid the extremes in either of two directions: on the one hand, that which tends toward an impoverished diet; on the other hand, that which brings into one meal too many heavy, highly concentrated foods.

Avoid having the meals one-sided, by serving the more watery foods, such as fruits or vegetables, with one of the heavier foods, as grains, legumes, nuts, etc. Vary the meals from day to day, making a change in both the taste and the appearance of the food as it comes to the table.

Serve some raw food daily, as in these the mineral and vitamine constituents are preserved unchanged by heating; and avoid, so far as possible, white breads, white rice, package breakfast foods, and so-called refined foods, which have been robbed of their life-giving elements, and thus cannot sustain the body in a healthy condition.

BACKBONE OF THE MEAL

We find, on examination, that good bread (entire wheat) possesses properties which so nearly represent the constituent parts of the human body as to make such bread ideal for building up the body and keeping it in a state of health. Such bread is rightly called "the staff of life," and from time immemorial, has been so considered the world over. Good bread is an exceedingly digestible food; and experiments show that nearly 98% of the carbohydrate nutrients, and about 88% of the gluten or protein constituents, are assimilated by the body. In the matter of building material, bread yields about 10% of protein, or about the recognized dietary requirement in normal health.

Good bread, therefore, of some kind, may justly be called the backbone of the meal. To this add the various fresh vegetables for their mineral value, flavor, and variety; and from day to day in rotation, one of the more solid foods as needed, such as noodles, beans, macaroni, etc., also varying proportions of nuts and dairy products. The following menus are designed to represent a fair combination, from the standpoint of nutrition, and also of agreement together.

MENUS FOR ONE WEEK

Sunday

BREAKFAST

OATMEAL CREAM STEWED PRUNES CORN BREAD (ENTIRE) YOGURT

DINNER

BAKED POTATO COUNTRY GRAVY NEW PEAS LETTUCE WHEAT STICKS WALNUTS

LUNCHEON

BAKED BANANA MILK TOAST ENGLISH BISCUIT MELON

Monday

BREAKFAST

STEAMED NATURAL RICE MILK GREEN PEAS TOAST PEAR SAUCE

DINNER

NEW ENGLAND BOILED DINNER OLIVES COTTAGE CHEESE ENTIRE WHEAT BREAD

LUNCHEON

CORN FLAKES CREAM PRUNES ORANGES ZWIEBACK YOGURT

Tuesday

BREAKFAST

CANTALOUPE POACHED EGGS BAKED POTATO WHEAT PUFFS SOY COFFEE

DINNER

CREAM OF CORN SOUP FRESH TOMATO BEANS WITH NOODLES APPLE PIE RYE BREAD

LUNCHEON

CHERRIES ORANGES LETTUCE AND EGG SANDWICHES CEREAL COFFEE

Wednesday

BREAKFAST

CRACKED WHEAT CREAM PLAIN OMELET STRAWBERRIES CORN DODGERS

DINNER

COMBINATION SALAD MACARONI FAMILY STYLE SPINACH OLIVES WALNUT STICKS

LUNCHEON

CREAMED NATURAL RICE STEWED FIGS ENTIRE WHEAT BISCUIT MILK

Thursday

BREAKFAST

NUT AND POTATO HASH CREAM TOMATO TOAST CANTALOUPE POP-OVERS

DINNER

VEGETABLE SOUP POTATO SALAD LIMA BEANS BEET GREENS BROWN BREAD

LUNCHEON

FRUIT SOUP BANANAS ORANGES CRACKERS CEREAL COFFEE

Friday

BREAKFAST

STEAMED WHEAT — CREAM — BAKED APPLE — FAVORITE LENTIL PATTIES
CORN BREAD — HONEY

DINNER

SAVORY POT ROAST — COLD SLAW — BROWNED POTATO — WALNUTS
ENTIRE WHEAT BREAD — YOGURT

LUNCHEON

ORANGES — SLICED PEACHES — CREAM TOAST — SOY COFFEE

Saturday

BREAKFAST

CORN MEAL PORRIDGE (ENTIRE) — MILK — BANANA CREAM TOAST
STRAWBERRIES — FRUIT BREAD

DINNER

LETTUCE AND TOMATO — MAYONNAISE — NOODLES AU GRATIN
GRAHAM BUNS — RAISIN PIE

LUNCHEON

CREAM TOAST — STEWED CHERRIES — ORANGES — ZWIEBACK — CEREAL COFFEE

In the making of menus, some provision is made for individual choice. Some persons will not require everything named on the menu, but each will choose such things and in such amounts as experience and sound judgment prove to be best suited to his necessities.

To show that it is not necessary to provide a large variety at one meal in order to supply the needs of the body, we may say that if breakfast No. 1 consisted of only the three first items,— milk, oatmeal, and prunes,— it would provide practically all the kinds of substance needed by the body. The oatmeal and the milk supply building material *(protein)*; the milk or cream supplies fat; the milk and the prunes contain sugar; and the oatmeal furnishes starch. These last three — fat, sugar, and starch — are *heat and energy* foods. Prunes are rich in iron and potassium, and provide a needed bulk; while the milk and the oatmeal furnish lime and phosphorus, all of which are essential ingredients for the making of a well balanced dietary. Milk and cream are also rich in essential vitamine.

The accompanying table gives the proportion of food elements in some of our most common foods. By a little study of the composition of various food materials, one can soon become sufficiently intelligent along this line to keep the diet properly balanced.

TABLE OF FOOD COMPOSITION

Name	Portion Containing 100 Calories	Wt. of 100 C.	Per cent of		
	Approximately	*Ounces*	*Protein*	*Fat*	*Carbohydrates*
Apple Sauce	ordinary serving	3.3	2	5	93
Apples, raw	2 apples	7.3	3	7	90
Apricots, cooked	large serving	4.6	6		94
Bananas	1 large	3.5	5	5	90
Beans, baked	small-sized dish	2.6	21	18	61
Beans, string	5 servings	16.6	15	48	37
Beets	3 servings	8.7	2	23	75
Bread, corn	small square	1.3	12	16	72
Bread, rye	2 small slices	1.4	14	2	84
Bread, white	ordinary thick slice	1.3	13	6	81
Bread, whole wheat	2 small slices	1.4	16	3	81
Butter	small pat	.44	.5	99.5	
Buttermilk	1¼ glasses	9.7	34	12	54
Cake, sponge	small piece	2.5	19	10	71
Cantaloupe	ordinary serving	8.6	6		94
Carrots	2 servings	5.8	10	34	56
Corn Flakes	ordinary bowl	.97	11	1	88
Corn, sweet	ordinary serving	3.5	13	10	77
Cottage Cheese	small serving	3.1	76	8	16
Grape Juice	small glass	4.2			100
Macaroni, cooked	ordinary serving	3.85	14	15	71
Milk, whole	small glass	4.9	19	52	29
Milk, skimmed	1½ glasses	9.4	37	7	56
Hominy, cooked	large serving	4.2	11	2	87
Honey	4 teaspoonfuls	1.05	1		99
Olives, ripe	7 olives	1.3	2	91	7
Orange Juice	1 teacupful	6.6			100
Peaches	2 medium size	4.7	4	2	94
Peanuts	about 26	.62	20	63	17
Pears	1 large	5.4	4	7	89
Peas, green	1 serving	3.	23	27	50
Pecan Nuts	about 8	.46	6	87	7
Potatoes, baked	1 large	3.	11	1	88
Rice, cooked	ordinary bowl	3.1	10	1	89
Rolls, buns	1 large	1.2	12	7	81
Soup, cream barley	ordinary bowl	5.	14	33	53
Strawberries	2 servings	9.1	10	15	75
Sugar, granulated	1½ tablespoonfuls	.86			100
Sugar, maple	2 tablespoonfuls	1.03			100
Tomatoes, fresh	4 medium size	15.	15	16	69
Wheat Flour	4 tablespoonfuls	.96	15	5	80
Zwieback	1 thick slice	.81	9	21	70

THE THIRD MEAL

One of the first and most essential requirements in the maintenance of health in these days of stress and competition is rest. When the evening meal is light, and composed of foods most quickly and easily digested, the stomach is permitted to have its work all done when the time comes for sleep, so it, as well as other organs of the body, may enjoy perfect rest, and thus kind nature may do her reconstructive work unhindered. Fruit, fruit juices, bread twice baked (zwieback), crackers, and milk or cereal coffee are foods best suited to the evening meal.

When the usual "three square meals" are taken daily, with the heaviest meal coming but an hour or two before bedtime, a great burden is imposed on the digestive organs at the very time when they should have the least. It follows that there is seldom any real relish for breakfast, and little is eaten. Often the noon meal consists of but cold foods and hot drinks. Thus by evening, a ravenous appetite for food is developed. Hence the work of digestion is carried into the sleeping hours, causing restless dreams, and in the morning, a sense of being unrefreshed upon awakening, with lack of energy.

When this practice is long continued, the digestive organs wear out prematurely, because they find no time for rest. The sufferer is at a loss to account for such a state of things, since he may be, aside from this, in apparent good health. Having insufficient rest, the digestive organs become weary; and this is the cause of that feeling of "goneness" so often misinterpreted as a demand for more food. The gratification of this false appetite when the stomach is already exhausted from overwork, does for a time remove the sense of faintness; but it is only the giving of a mortgage on the reserve forces, for the day of physical reckoning must come. To husband carefully the reserve forces of vitality is to avert a crisis, and is the first essential in preserving the health.

ABOUT THE TWO-MEAL PLAN

An impartial trial affords abundant proof that for most persons, two meals a day are better than three. Especially is this so

with those of sedentary habit, and with brain workers. The times for meals should be fixed proportionately far apart, and the meals taken regularly. Dr. D. H. Kress, a physician of long practical experience, writes of the two-meal plan as follows:

"Two meals a day are sufficient, and in every way preferable whenever it can be intelligently carried out. Of course, there are those who can eat but little at a meal; for such, three meals are best. But most dyspeptics could cure themselves by simply taking two meals a day, thus affording the stomach a period of rest between meals and enabling it to do better work."

"As a rule, men fast when they can no longer eat if they would. Even a long annual fast is better than that; but, as stated, a daily fast by dropping out one meal a day is the best method of fasting. Two meals a day, I am convinced, would result in increased health to the majority of mankind, and would greatly lessen the labor of those who are at present troubled and worried about much serving, to such an extent that they have no time for anything else."—*"Life Boat," June, 1919.*

Mr. W. Earl Flinn is quoted on the same point:

"In most cases it has been demonstrated that two meals are sufficient for all kinds of work. Of course the food must be scientifically selected, as well as right combinations, and well masticated. The Greeks built up the most beautiful women and men ever known on two meals a day."—*Elmira "Star Gazette," November 8, 1911.*

The Holy Scriptures tell us that when God commanded the ravens to feed the prophet Elijah, in a time of great famine, they brought him but two meals a day. (1 Kings 17: 2-6.)

A man who is engaged in severe physical exercise or work, will not suffer so acutely from an excess of protein, or from the habit of eating a hearty meal at night, as will a person who has little exercise, or is weak physically. His system is better able to eliminate excess of waste products. However, to preserve the health by reasonable and timely care is much better than to regain it when it is lost. Those who, for a reasonable length of time, live on a moderately low protein diet, and eat only two meals a

day, or at most a light lunch for the evening meal, soon observe a clearness of mind and an increase of physical endurance that are most gratifying.

ADAPTATION OF FOOD

The diet that is most conducive to good health, necessarily varies with circumstances, depending largely upon the occupation of the individual, the climate in which he lives, and the season of the year. Some foods adapted for use at one season or in one climate are not suited to another; and different foods are best suited to persons of different occupations. Often food that can be used with benefit by persons engaged in hard physical labor is unsuitable for those of sedentary habit.

Some people make the mistake of eating in warm weather the same foods and the same quantities of food that they consume in the winter; but the quantity of food should be reduced during the spring and summer months. The digestive organs cannot readily care for the same quantity or the same quality in spring that they are capable of digesting during the winter. Wisely, therefore, with the return of spring, nature takes away the desire for many of the more solid foods, and furnishes us with fruits, greens, and succulent vegetables, which are appetizing and cooling to the system.

Much of the common sickness, especially during the spring and summer months, is caused by the absorption of poisons resulting from the decay of unsuitable food in the intestinal tract. Pimples, rash, and itching of the skin are often signs that nourishment ill suited to the season or to the condition of the blood has been taken into the body. Fresh fruits are both food and medicine, and are needed by the blood; being especially rich in alkaline elements, they serve to keep the blood in good condition, and because they contain the carbon in a form most easily digested (fruit sugar), they hold first place in the list of foods which go to make up the ideal diet.

XII. COURSE OF COOKING LESSONS

"Study to show thyself . . . a workman that needeth not to be ashamed."

The following lesson outline is intended merely as an aid to those who are called upon to teach the subject of cooking in sanitariums and other educational institutions. Accordingly, the practical work has been arranged to cover, as far as possible, all the more important recipes adapted to class work, and to take them up in an order favoring economy of time, and providing for an equalization of work between baking, stewing, etc.

This short course, which is adapted for the advanced student, usually extends over a period of from ten to twenty weeks. One two-hour demonstration and lecture period is usually conducted by the instructor weekly; this is followed by two two-hour periods a week of practical work by the class individually. Careful attention is to be given to the study of the nutritive values of foods, their digestibility, combinations, etc., also to the general principles which govern in the making of menus. Familiarity with the text matter on these subjects should be required of the class; the lessons so learned to be impressed during the practical work that follows.

LESSON OUTLINE

Lesson 1. *Principles of Canning:* (vegetables) p. 253, string beans, corn, pumpkin.

Lesson 2. *Principles of Canning:* (fruits) p. 256, fruits, tomatoes.

Lesson 3. *Preservation in Salt:* p. 255, string beans, cucumbers, peppers.

Preservation of Eggs: (water glass) p. 255.

Lesson 4. *Cookery and Food Preparation:* p. 61, steamed rice, rice and nut patties, stuffed bell peppers.

Lesson 5. Macaroni family style, corn dodgers, stewed beets.

Lesson 6. Vegetable julienne soup, baked bean *purée,* wheat sticks.

Lesson 7. *Principles of Successful Cookery:* p. 67, spinach or other greens, cream of tomato soup, corn meal puffs.

Lesson 8. Vegetable salads, mayonnaise, garnitures.

Lesson 9. Nuttose, potato soup with dumplings, wheat puffs.

Lesson 10. *Food Economics:* p. 57, baked dressing without eggs, brown gravy, corn bread. (Save some of the dressing cold for the next lesson.)

Lesson 11. Nut and potato pie, savory potato hash, stewed lentils, gluten gruel. (Save some cooked lentils for the next class.)

Lesson 12. Lentil and potato hash, cream of corn soup, breaded tomato.

Lesson 13. Favorite lentil patties, country gravy, Graham fruit pudding.

Lesson 14. *Principles of Bread Making:* entire wheat, or quick method, Parker House rolls, pumpkin pie without eggs.

Lesson 15. Wash out gluten, savory pot roast, oatmeal gruel.

Lesson 16. Gluten biscuit, diabetic bread, diabetic puffs, soy coffee.

Lesson 17. Vegetable gluten stew, lemon snow, custard sauce.

Lesson 18. *Vegetable Gelatin:* p. 201, lemon, orange, fruit, aërated oatmeal gems.

Lesson 19. Potato stew with dumplings, cereal coffee, junket.

Lesson 20. Mix and roll out noodles, potato duchess, apple snow.

Lesson 21. Cream sauce, noodles *au gratin,* scalloped beets, baked parsnip, sago fruit mold.

Lesson 22. Lemon pie, rice and soy bean loaf, rice and soy bean patties.

Lesson 23. Baked savory eggplant, stewed carrots, cream rolls.

Lesson 24. Loaf cake, icing, granose gruel.
Lesson 25. Vegetable loaf *en aspic,* tomato salad agar, aërated wheat gems.
Lesson 26. Lima bean and macaroni pie, steamed fruit pudding, lemon sauce.
Lesson 27. Fruit salads, sauces, garnitures.
Lesson 28. Savory potato, rice and egg croquettes, creole sauce.
Lesson 29. Pasteurized milk, yogurt, cottage cheese, butter substitutes, browned flour, oat cookies.
Lesson 30. Potato and lima bean pie, browned rice, cream eggnog.
Lesson 31. Spanish rice, fruit soup, baked custard.
Lesson 32. Ragout of vegetables, pop-overs, malted nuts.
Lesson 33. Toasts, fruit eggnog, coddled egg.
Lesson 34. Sandwiches, omelet puff.
Lesson 35. Layer cake, frosting, ornamenting.

ESSENTIALS TO SUCCESS

In this work, as in any other, two things are vital to success,—first a careful planning, and then the carrying out of the plans made; as expressed in the terse sentence, "Plan your work, then work your plan."

All the ingredients necessary for the preparation of a dish should be at hand and carefully measured before the work of combining them is begun. Accuracy in measuring and carefulness in combining are as essential to the success of a recipe as is the knowledge of what is to go into it.

The effect of heat at different temperatures, and the time of exposure to it, must be understood. But this knowledge can come only as a result of experience.

The following articles are necessary for measuring: a cup holding exactly one half pint, with thirds and fourths indicated, teaspoons and tablespoons of regulation sizes, and a common table knife. To insure uniformly good results, *level measurements* have been adopted by leading teachers in cookery, as the best guide that can be given; and these will be used throughout this book. The following table of measures may be used as a guide:

TABLE OF MEASURES

3 teaspoons	equal 1	tablespoon
2 tablespoons of sugar or liquid	equal 1	ounce
16 tablespoons	equal 1	cup
4 cups	equal 1	quart
2 cups of sugar and most liquids	equal 1	pound
4 scant cups of sifted flour	equal 1	pound
10 eggs	equal 1	pint
9 egg whites	equal 1	cup
8 whole eggs	equal 1	pound
12 yolks (large)	equal 1	cup

To measure a cupful of any dry ingredient, fill the cup, rounding slightly by placing material in the cup with a spoon; and with the sharp edge of a case knife, brush off all material that is piled above the brim. Care must be taken not to shake the cup.

To measure a teaspoon or tablespoon of dry ingredients, dip the spoon into the same, and with the edge of a case knife turned toward the tip of the spoon, brush off all that extends above its edge. For one half spoonful, divide with a knife lengthwise of the spoon, and push out one half; divide halves crosswise for quarters. The term "sifted flour" implies that flour is sifted once before measuring.

In combining ingredients, three movements are employed, described as follows:

1. *Stirring,* a circular motion made with a spoon through the ingredients, continued until all are blended.

2. *Beating,* a turning of ingredients over and over rapidly by means of a spoon or an egg whip, to inclose air by continually bringing the under part to the surface, allowing the utensil used to be brought constantly in contact with the bottom of the dish, and up through the whole mixture.

3. *Folding,* a turning over and over of the ingredients; best accomplished by a vertical, downward motion of spoon or whip, bringing it up through the mixture, and each time allowing it to come in contact with the bottom of the dish, repeating until all is thoroughly blended. This is a slower movement than that of beating, and its object is so to mix ingredients that the air already introduced may not escape.

XIII.

BREAD

"There is more religion in a loaf of good bread than many think."

BREAD constitutes one of the most important articles of diet, and deserves more attention than it receives. Considering the conveniences that exist everywhere, and the widespread knowledge of bread making, it seems unnecessary and wrong to put poor bread on the table. One has well said, "Homemade bread requires care and attention; then you have the real staff of life."

Weight for weight, bread must be regarded as one of the most nutritious of foods. The fact that more than[1] three fifths of the loaf of bread consists of solid nutriment, and less than two fifths water, gives it a special place in the list of foods; and no animal food, and but few vegetable foods, can be compared with it.

[1] Bulletin No. 28, United States Department of Agriculture.

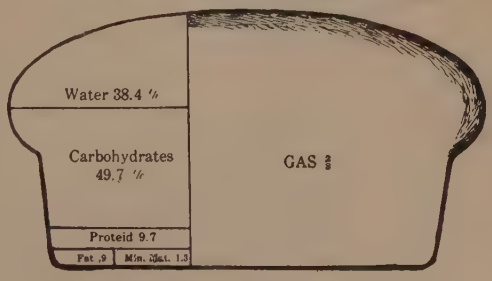
THE BEST FLOUR

Wheat is the most important cereal used in American and European countries, where it occupies the same position in the dietary as does rice among the Oriental peoples. When a good grade of flour is mixed with water and kneaded, the gluten of the wheat becomes very elastic; and it is this elasticity that holds in the dough the gas formed by the leaven, until the dough is sufficiently light and porous.

Wheat contains the most tenacious gluten of any of the cereals, and hence is best adapted to the making of yeast-raised bread. Rye contains a strong gluten, and next to wheat, is best adapted to the making of raised bread; but because of its strong flavor, it is usually mixed with a greater quantity of wheat flour. Corn, oats, barley, rice, etc., lack the tenacity of gluten found in wheat and rye, and therefore cannot be used alone to good advantage, in yeast-raised bread. In bread making, they are used chiefly to give variety and flavor, the proportion of these flours used being generally about one fourth or one third.

The proportion of gluten in different grades of wheat varies; but the mere quantity of gluten is by no means the only standard of the commercial value of flour, the quality also counting for much. Soil and climate are essential factors in modifying the character of wheat, and necessarily of flour. The same variety of wheat, grown on the same soil, has also been known to show varying degrees of strength of its gluten in different seasons.

Be this as it may, as a rule, wheat grown where the summers are short and not too hot furnishes the best and strongest gluten for bread making. For instance, the wheat grown in Russia is of the best. Canada wheat, like that grown in the Northern States, is excellent, for the same reason. Wheat grown in the Middle States is



of fair quality; but that grown in the Southern States and that grown in California, is usually soft, containing a weak gluten, and consequently not well adapted to the making of yeast-raised breads.

Soft wheat is light-colored and has plump kernels; while hard wheat is commonly of a dark color, with kernels not so rounded as the former. Soft wheat is best for the making of crackers, pastries, and the like, as the dough is more brittle than that made from hard wheat flour. Hard wheat, when ground entire and made into bread, gives a dark-colored loaf with excellent flavor. If a good grade of flour is necessary for the making of satisfactory white bread, it is all the more needful in the making of entire wheat bread, as the mixture of bran particles in the flour permits the gas to escape a little more readily than when white flour is used, wholly or in part.

In order to make good entire wheat bread, therefore, it is first of all essential to have a flour that contains a strong gluten; also the flour must be ground *fine,* to prevent the gas from escaping before the dough is sufficiently light. The dough for entire wheat bread must be soft — so soft that it can scarcely be kneaded on the board. This is most important, because the bran absorbs moisture in the loaf, even after baking, and causes it to dry out.

PRINCIPLES OF BREAD MAKING

Breads are divided into two classes:

Fermented, made light by a ferment, yeast being usually employed.

Unfermented, made light by the introduction of air into the dough or batter.

Fermented bread is generally made by mixing flour, water, salt, fat, and yeast to a dough, a small amount of sugar being added to hasten fermentation. The dough is kneaded until it is elastic to the touch and does not stick to the board, the object being to incorporate air, and to distribute the yeast uniformly. It is then covered, and allowed to rise until it has doubled its bulk, and does not respond to the touch when tapped sharply, but *gradually and stubbornly begins to sink.* At this stage, the dough is "ripe," and ready to be worked down. It will require all the

way from two to three and a half hours to rise, depending on the grade and consistency of the flour used, and the temperature of the room in which it is set. This process is best accomplished at a temperature ranging from 75° to 85° Fahrenheit. The bread is then worked down well, turned over in the bowl, and left to rise until about three fourths its original bulk. It is again worked down and allowed to rise the third time, to half or two thirds its original bulk. Then it is turned out on a board, worked together, molded into loaves, and put into pans for baking. The third rising is sometimes dispensed with; but it gives such a good grain to the loaf, thus improving both the shape and the texture of the loaf, that most housewives will favor it after a trial.

Bread is also made by setting a sponge at the beginning, making a batter of the water, the yeast, and part of the flour, and letting it rise until it is light, then adding the remaining ingredients, and working all into a dough. Bun and cracker dough is usually set with a sponge, as they require a very fine and light texture, which is best obtained by this method. Ordinary white and entire wheat breads are often made by the same process. A sponge is light enough when it appears frothy and full of bubbles. The time required will vary with the quantity and quality of yeast used, and with the temperature of the room in which it is set to rise.

Bread made from entire wheat or Graham flour must be watched more closely than that made from white flour, as it rises in less time than white bread, and the gas escapes from the dough more easily. Entire wheat bread, furthermore, must not be permitted to rise so light in the pans as white flour bread. Care in this respect will preserve in the bread that sweet, nutty, wheat flavor which is so characteristic of bread made from the entire grain, but which will be lacking if the loaves rise too light in the pans.

MOLDING THE LOAVES

In molding the loaves, it is necessary that each loaf be kneaded well. If the dough is put into the pans in soft loaves,— soft because they were not kneaded enough,— the bread will rise flat on the top instead of rounded, and is likely to fall when placed in the oven. Each loaf should be kneaded into a hard roll, then

flattened down, and rolled up into a hard roll. Put into oiled pans, and brush the top of each loaf with an oiled brush, to prevent a crust from drying on while the bread is rising.

PROVING THE LOAVES

It is very important to know when the dough is sufficiently light *after it has been placed in the pans.* It should never be allowed to rise to its limit before it is put into the oven, but should continue to rise for the first ten minutes afterwards. It is far better to bake the bread a little too soon than to let it get too light. If it is permitted to rise too much in the pans, it will be coarse-grained and rather tasteless. If, however, the loaves get too light in the pans, they may be molded over and put to rise again. *To test the lightness of the dough in the pans,* press the loaf gently with the index finger. If it responds promptly to the pressure of the finger, it may be left to rise more; but if it responds weakly, it should be placed in the oven immediately.

BAKING

Bread should be baked in a quick oven to begin with. The oven should not be so hot as to burn the outside of the loaf before the inside is cooked, but should be of such a temperature that the bread may rise for the first ten minutes, and then have sufficient crust to hold it up, when the fire should be closed up to hold a steady heat until the bread is done. For the small loaves, forty to forty-five minutes is generally sufficient; for the larger ones or those of ordinary size, one hour to an hour and a quarter. A well baked loaf may be lifted from the pan and placed upon the palm of the hand without burning it. This should always be the case when bread is well baked and the moisture evaporated. When done, remove from the pans and lay on the side on a wire rack to cool. If brushed over the top with warm water just after it is taken out of the oven, the crust of the bread will keep softer, and will have a nice color.

It is well to remember that when yeast bread is set warm, it must be kept warm throughout the rising, as, if it becomes chilled after it begins to work, it will be "sickly," and is likely to sour. When a sponge or dough is set at night, it should always be set

with *cold* water, about 65° or 70°, or about the temperature of the room. Bread set at night, furthermore, requires only half as much yeast as is used for bread set during the day. Night bread is usually set with a sponge, the amount of flour used being about the same by measure as that of the liquid. By morning, it will be lively, and when mixed into a dough, will rise very quickly without any warming.

As a general rule, with the best quality of white flour, three measures of flour to one of water are required to make a dough of the proper consistency. For making entire wheat or Graham bread, less flour is used in proportion.

YEASTS

Yeasts belong to the *fungi,* one of the lowest order of non-flowering plants, without leaves or stems. Like all other plants, they require warmth, moisture, and food in order to grow; and when properly supplied with these, they multiply rapidly.

Pasteur found, by experimentation, that when yeast from fresh grape juice was watched under the microscope,[2] "two cellules had furnished eight, including the two mother cells, in the course of two hours." Fermentation proceeds slowly at a temperature 50° F.; but from seventy to ninety degrees, it grows rapidly. Fermentation may be arrested by the exhaustion of either the fermenting agent (yeast) or the food supply (starch or sugar), or by exposure to heat at the temperature of boiling water. When not well nourished, the yeast cells begin to break up and die, and finally decompose with an offensive odor.

Yeast converts sugar into alcohol, carbon dioxide, and other products of fermentation; and it is believed that leavened bread owes its flavor largely to these organic substances. Dried yeast cakes are made by mixing about 20% starch with the yeast for the purpose of keeping it. Pure yeast (washed and pressed into cakes, as compressed yeast) will keep for weeks in a cold place, such as an ice box; but it will spoil in a few days at best if not kept cold. In the making of all the homemade liquid yeasts, essentially the same principles are involved,— the introduction of

[2] *"Leavening Agents,"* by Hart.

a dried yeast cake, or a small quantity of lively yeast, into a mixture of some kind of starch, such as potato, or flour, or both. Under proper conditions of warmth, the small amount of yeast begins to supply itself with food by converting the starch into dextrin, and multiplies itself with great rapidity, and will continue to do so as long as there is material to supply it with the means of growth.

While the growth of yeast under normal conditions is rapid, its decay is equally so; and unless preserved by some means, the yeast plants will die, and the mixture become sour. If not to be used immediately, yeast should be placed in some receptacle as nearly air-tight as possible, and set in a cool cellar or refrigerator, where it can be kept at a temperature not conducive to fermentation. Thus kept, the little yeast plants will remain dormant until again surrounded by favorable conditions for growth.

The starch of potato seems to furnish better material for the growth of yeast than that of flour. The potatoes should be perfectly mature when used for this purpose; new ones will positively not answer the purpose. Sugar helps to nourish the yeast plant, and a small amount is usually employed in making yeast.

The most convenient yeast is that sold as compressed yeast. It should be used only when fresh, its freshness being determined by its light color and the absence of dark streaks. When compressed yeast is unobtainable, very satisfactory results follow the use of liquid yeast.

LIQUID YEAST

1 cake dried yeast — 2 cups potato water
¼ cup (4 level tablespoons) sugar

Drain the water from boiled potatoes at noon, and when it is cooled to about 100°, add the sugar and the yeast cake broken up. Put in a glass jar and set in a *warm* place until the evening. The liquid should measure 2 cups, and should be covered with a thick foam before it is used for bread. Salt and shortening retard the action of yeast, hence are omitted in setting a sponge, and are added in mixing the dough. *Use 4 measures of water to 1 measure of the above liquid yeast when set at night, and 2 measures of water to 1 of yeast if set during the day.*

FERMENTED BREADS

ENTIRE WHEAT BREAD No. 1

1½ quarts *cold* water
½ cake compressed yeast
2 tablespoons salt
4 tablespoons melted vegetable fat
4 tablespoons sugar
3½ quarts entire wheat flour

Night Sponge (9 p. m.).— Dissolve the yeast in 1 tablespoon water to a smooth paste and add the cold liquid. Add 1½ quarts of the flour and beat to a smooth batter. Cover, and if the weather is cold, wrap in a cloth until the morning.

Dough (6 a. m.).— Add the salt, the sugar, and the vegetable fat to the sponge, and mix well. Add the balance of the flour, reserving a large handful for the board, and mix to a soft dough. Turn out on a floured board, and knead until elastic to the touch (about 5 to 8 minutes); then put into an oiled bowl, cover, and let rise until, when tapped sharply, it gradually begins to sink, which will require from 1½ to 3 hours. Work down thoroughly, turn over in the bowl, cover, and let rise again until about three fourths its original bulk; then work down the second time. Cover, and let rise the third time, until about two thirds its former bulk; then turn out on the floured board, knead again, mold into loaves, and put into pans for baking. Brush over the top of each loaf with an oiled brush, and let rise until, when pressed with the finger, it responds rather weakly to the pressure; then bake in a good oven.

Study instructions previously given for molding and proving the loaves, and the length of time for baking.

In hot weather, the day recipe is to be preferred.

ENTIRE WHEAT BREAD No. 2 (Day Recipe)

4 tablespoons melted vegetable fat
4 tablespoons sugar
3½ quarts entire wheat flour
1½ quarts *warm* water
1 cake compressed yeast
2 tablespoons salt

Dissolve the yeast in 1½ tablespoons water, add the warm liquid, the salt, the sugar, and the fat, and mix well. Add the flour (reserving a handful for the board), and mix into a soft dough. Turn out on a floured board, and knead until elastic to the touch. Put into an oiled bowl, cover, and set in a *warm* room to rise. Proceed and finish the same as for entire wheat bread No. 1.

FRUIT BREAD

Take half of either of the foregoing recipes for entire wheat bread, after it has risen the first time. Add ⅓ cup melted vegetable fat, ⅓ cup sugar, and work into the dough until absorbed. Add 3 cups of seedless sultana raisins that have been washed, drained, and heated in a covered vessel until hot through, then cooled. Work them into the dough by folding the dough over and over until they are well mixed through. Cover, and let rise again until about three fourths its original bulk; then turn out on a floured board, work together, mold into loaves, and put into pans for baking. Raise and finish the same as entire wheat bread.

GRAHAM BREAD (So Called)

1 quart warm water
1 cake compressed yeast
1½ tablespoons salt
2 tablespoons sugar
2 tablespoons melted vegetable fat
1¼ quarts entire wheat flour
1½ quarts white bread flour

Dissolve the yeast in 1½ tablespoons water, add the warm liquid, the salt, the sugar, and the fat, and mix well. Add the flour (reserving a small handful for the board), and mix into a dough. Knead until elastic to the touch (about 8 minutes or more). Put into an oiled bowl, cover, let rise, and finish the same as for entire wheat bread.

BRAN BISCUIT

Take one half of the above Graham bread dough after it has risen and has been worked down the second time. Add 3 tablespoons warm molasses and ¼ cup scalded and warm rich cream (or 2 tablespoons melted vegetable fat and 2 tablespoons canned milk), and work into the dough until absorbed. Add 2 cups bran, and work into the dough by folding it over and over until blended. Cover, and let stand until it begins to rise again (about 20 minutes); then roll out to ½-inch thickness, cut with a biscuit cutter, lay in an oiled baking pan, let rise about half again their original size, and bake in a medium oven.

GRAHAM BUNS

2 cups milk
1 cake compressed yeast
⅓ cup sugar
¼ cup melted vegetable fat
1 teaspoon salt
2 cups white flour
About 4 cups Graham or entire wheat flour, or enough to make a *soft* dough

Dissolve the yeast in 1½ tablespoons water, add the milk scalded and still warm, and beat in 2 cups white flour to a smooth batter. Cover, and set in a warm place until light (about 1½ hours). Add the salt, the sugar, and the fat, and mix well. Add the rest of the flour, or enough to make a very soft dough. Turn out on a floured board and knead, turning over and over until elastic to the touch; then put into an oiled bowl, cover, and let rise until when tapped sharply it begins to sink. Work down well in the bowl, cover, and let rise the second time until about three fourths its original bulk; then turn out on the floured board, work thoroughly, cut and mold into small buns, and lay in an oiled baking pan. Set in a warm place, with a cloth over the pan if convenient, and let rise until very light; then bake in a medium oven.

RYE BREAD

1 quart warm water
1 cake compressed yeast
1½ tablespoons salt
2 tablespoons sugar
2 tablespoons melted vegetable fat
6 cups entire wheat flour
5 cups rye flour

Dissolve the yeast in 1½ tablespoons water, add the warm liquid, the salt, the sugar, and the fat, and mix well. Add the flours, reserving a large handful of the entire wheat flour for the board, and mix into a dough. Knead until elastic to the touch, put into an oiled bowl, cover, and set in a warm room to rise, the same as for entire wheat bread; and when it has been worked down the second time, roll into ordinary rye bread loaves. Lay in an oiled baking pan, cut three gashes across each loaf, cover with a cloth, let rise until very light, and bake as usual.

RAISED CORN BREAD

3 cups corn meal
9 cups entire wheat flour (ground fine)
3 cups boiling water
2 cups cold water
1½ tablespoons salt
¼ cup melted vegetable fat
¼ cup sugar
1 cake compressed yeast

Put the corn meal into a bowl, and pour on the boiling water in a slow stream, stirring constantly. Add the cold water, and mix well. Dissolve the yeast in a little water; and when the scalded meal is cooled to about 85°, add the yeast and 2 cups entire wheat flour, and mix well. Cover, and set in a warm room until light and spongy (about 1½ to 2 hours); then add the salt, the sugar, and the fat, and mix well. Add the remaining flour, or enough to make a medium soft dough, and knead on a board until elastic; then put into an oiled bowl, cover, and set in a warm room to rise. Follow the directions for raising entire wheat bread; and when it has been worked down the first time, mold, and put into pans for baking. Do not allow it to rise too light in the pans.

PARKER HOUSE ROLLS

1 cup scalded and warm milk
½ cake compressed yeast
2½ cups bread flour
2 tablespoons vegetable fat
2 tablespoons sugar
½ teaspoon salt

Dissolve the yeast in 2 teaspoons water, add the warm milk, and beat in 1 cup white flour to smooth batter. Cover, and set in a warm room until very light (from 1½ to 2 hours). Add the salt, the sugar, and the fat, and beat into the sponge. Add the remainder of the flour, reserving a handful for the board, and mix to a soft dough. Turn out on a floured board, and knead gently until elastic, being careful that it does not stick to the board. Put into an oiled bowl, cover, and let rise until, when tapped, it begins to sink; then work down well, and let rest until half again its original bulk. Work together, and turn out on a floured board. Divide into 1½-ounce pieces, and divide each piece into two. Roll out into small, round buns, and lay on a well floured board. When they have risen to nearly half again their original bulk, make a crease through the center, with a small

roller the size of a broom handle. Oil one half, fold the other half over, and press together. Lay in an oiled baking pan, let rise until *very light,* then bake in a quick oven.

SHORTCAKE

Use the same ingredients as for Parker House rolls, except to add 1 egg, slightly beaten, to the sponge when it is light, and this will require ½ cup more of flour. Mix to dough, and raise the same as the preceding. Roll out to ⅓-inch thickness, and lay in an oiled baking pan. Brush over with oil, and sprinkle with flour, then with sugar. Press down with a spoon so the particles of flour get moistened on the top. Let rise until *very light,* and bake in a quick oven.

STEAMED BROWN BREAD

1 cup scalded milk
½ cake compressed yeast
1 cup Graham flour
¾ cup corn meal (lightly toasted in the oven)
½ cup rye flour
½ cup bran
1 teaspoon salt
⅓ cup warm molasses
1 tablespoon vegetable fat
¾ cup sultana raisins

Dissolve the yeast in 2 teaspoons water, add the warm milk, and beat in the Graham flour to a smooth batter. Cover, and set in a warm room for 1½ hours. Add the salt, the warm molasses, and the oil, and beat into the sponge. Have the raisins soaked overnight, and warmed. Mix all the ingredients with a heavy spoon until thoroughly mixed. Cover, and let rise until, when tapped sharply, it *begins* to sink. Then work down well. Put at once into an oiled pail with tight-fitting cover, and steam for 2 hours. Turn out on an oiled pie tin, and bake in the oven for 15 minutes. ¾ cup of rye *meal* can be substituted for the rye flour and the bran, when on hand.

QUICK METHOD BREAD (for Class Work)

½ cup warm water
½ cake compressed yeast
Scant ½ teaspoon salt
1 teaspoon sugar
1 teaspoon melted vegetable fat
½ cup white bread flour
1 cup entire wheat flour

(USE LEVEL MEASUREMENTS FOR ALL INGREDIENTS.)

Dissolve the yeast in 1 tablespoon water, add the warm liquid, and beat in the white flour to a smooth batter. Cover, and set in a *warm* place until the sponge is light and full of bubbles, which will require about 30 to 35 minutes. Add the salt, the sugar, and the fat, and mix well. Add the entire wheat flour (reserving a large spoonful for the board), and mix into a dough. Knead until very elastic, then place immediately in an oiled (1-pound) bread tin. Brush over the top with an oiled brush, set in a warm place to rise until about double its bulk, and bake in a medium oven. Under favorable conditions, this process requires but 2 to 2½ hours in which to have the bread complete.

GLUTEN BISCUIT

4 cups strong white bread flour 1⅓ cups cold water

Mix to a dough; then break and pull apart until very elastic and "rubbery," and let soak in water for ½ hour. Wash out the starch, changing the water (pouring it off slowly, so as not to lose any of its gluten) until the water runs clear. Wring out as much water as possible, place the gluten in a large soup bowl with a tight-fitting plate or bowl over the top, and let stand in a cold place overnight to ripen. Drain well. Wet a cutting board thoroughly, and lay the gluten on it. Cut into small squares, about the breadth of the thumb nail, lay in an oiled baking pan, leaving plenty of space between, and bake in a slow oven until crisp and a very light golden color.

DIABETIC BREAD (Strong in Gluten)

Take the above "ripe" gluten, work in warm water to take off the chill, drain well, and put into a bowl. Dissolve 1 cake compressed yeast in 1½ tablespoons water, add 1 tablespoon flour, and make smooth. Work this into the gluten with ½ teaspoon salt. Then work in gradually 1 cup flour by pulling the gluten apart and dipping it into the flour, until all the flour is absorbed in the gluten. Then work in 2 tablespoons melted vegetable fat in like manner. Put into an oiled bowl, cover, and set in a warm room to rise. When very light, work down, and let rest until it begins

to rise again. Then mold into a loaf, and put into a pan for baking. Let rise until light, and bake in a good oven.

CUT ZWIEBACK

Cut stale bread into slices about ¾ of an inch thick, put into a shallow baking pan in single layers, and set in a slow oven until thoroughly dried. Then put into a moderate oven, and allow it to brown to a golden color through the entire thickness.

PULLED ZWIEBACK

Take fresh bread, and break carefully, pulling into pieces instead of using pressure. The pieces should be about the size of a medium apple. Proceed to dry and bake, the same as for cut zwieback.

UNFERMENTED BREADS

Unfermented breads are of two kinds, *dough breads* and *batter breads*. Being free from any chemical or ferment, they are wholesome, and are easily digested when properly made. Space will not permit us to enter into an extended discussion of the effects following the use of sodium bicarbonate (soda) and baking powders in bread making. However, a few quotations from authoritative sources may be of interest.

Harvey W. Wiley, food expert and chemist, in his book "Foods and Their Adulteration," under the caption "Harmfulness of Baking Powder Residues," page 253, has the following to say:

"The question of harmfulness of the residues left by the various forms of baking powder is one which has been of much interest to the hygienist and physician. It is not claimed in any case that the residues are beneficial. The principal question which has been discussed is, Which of them is the least harmful? This is a question which it is not proper to enter into in this manual. It might, however, not be out of place to say that the use of chemical reagents for leavening bread is not so advisable as the ordinary fermentation."

"It would be better, evidently, if all people used more yeast breads and less baking powder rolls. At the same time, the utility and convenience of baking powder cannot be denied, and this is

a factor which must be taken into consideration in the general discussion and final resolution of the question."

In writing for *Good Housekeeping,* May, 1914, on the subject "The Baking Powder Question," Dr. Wiley says further:

"As a matter of fact, all baking powders leave residues in the food. The alum baking powders leave a residue consisting of Glauber's salts (sulphate of soda) and aluminum hydrate. The cream of tartar baking powders leave a residue of tartrate of soda and potash,— Rochelle salts. The phosphoric baking powders leave a residue of phosphate of lime and soda."

"According to my own personal view, the continual ingestion of bread containing excessive quantities of mineral ingredients of any of the kinds mentioned above is not desirable. Of the three kinds of salts which are left in the bread, there is little choice between those produced by the cream of tartar and phosphoric breads."

"My advice to housekeepers is to use as little baking powder as possible. Serve unleavened bread, or that which is leavened with yeast. The man who will invent a pure carbon dioxide in a compressed form which can be liberated in bread without leaving any residue will be a benefactor to the race."

Dr. I. P. Pavlov, professor in the Imperial Military Academy of Medicine, St. Petersburg, writes as follows: "Concerning the effects of a continued addition of sodium bicarbonate to the food,— such an addition for a length of time markedly depresses the secretory activity of the pancreas, and brings it down to an unusually low level." "To sodium bicarbonate (soda), an inhibitory influence must be ascribed."—*"The Work of the Digestive Glands," pages 113, 145.*

In regard to the destructive action of soda on vitamines in food, the Monthly Bulletin, Indiana State Board of Health, of June, 1916, contains the following: "Another disease called pellagra, which frequently ends in insanity and death, is also produced by eating devitamined foods. It is found that soda kills vitamines; therefore we must not put soda into our foods. . . . Biscuits made light with bicarbonate of soda (baking soda), and which always

have a 'soda taste,' are very unwholesome. . . . Cooks should not use bicarbonate of soda in cooking dried beans, dried corn, dried peas, and the like, even if it does hasten the process."

BATTER BREADS

Air may be incorporated into a batter by beating. The use of eggs is a great aid, as the white of egg, when beaten, readily catches air and helps to convey it into the batter. The following recipes will help to illustrate these principles.

WHEAT PUFFS

1 cup sifted white flour
⅓ cup entire wheat flour
½ teaspoon salt
2 teaspoons melted vegetable butter
1 egg separated
1 cup milk

Put the milk, the egg yolk, the salt, and the fat into a bowl, and mix well. Add the flour, and mix smooth, using a spoon. (Do not beat the batter when the white is beaten separately, or the puffs will blow out in the top.) Beat the white stiff, and fold in the batter by a few long strokes, so as not to break down the lightness of the egg too much. Dip with a large spoon into hot, oiled iron gem pans, and bake in a medium oven to a nice brown.

CORN MEAL PUFFS

1 cup pastry flour
⅓ cup corn meal (toasted lightly in the oven)
½ teaspoon salt
2 teaspoons vegetable fat
1 scant cup milk
1 egg separated

Make a batter of flour, corn meal, milk, oil, salt, and yolk of egg, and stir smooth. Beat the white stiff, and gradually fold the batter into the beaten white, and bake the same as wheat puffs.

WHEAT GEMS

1 cup sifted white flour
⅔ cup entire wheat flour
1 cup milk
2 tablespoons melted vegetable butter
½ teaspoon salt
1 egg

Put the whole egg into a bowl, add the milk and the salt, and beat well. Blend the flours together, and add them gradually, beating constantly, and continue to beat for a few minutes after all the flour has been added. Add the vegetable fat, and continue

to beat for a few moments. Fill the hot, oiled iron gem pans, and bake in the same manner as for wheat puffs.

RAISIN PUFFS

Add ⅓ cup of seedless sultana raisins to either of the foregoing recipes for bread, the raisins having first been washed, drained, and warmed in the oven or in a closed saucepan long enough to soften and swell them, and then cooled.

AËRATED OATMEAL GEMS

1⅓ cups milk
½ teaspoon salt
2 tablespoons melted vegetable fat
1 tablespoon sugar
1⅓ cups rolled oats (H. O.)
½ cup entire wheat or Graham flour

Put the sugar, the milk, the salt, and the fat into a bowl, and mix well. Add the rolled oats and the flour, mix to a smooth batter, and set in a cold place overnight. Beat a few hard strokes with a spoon, and dip into hot, oiled iron gem pans, and bake in a medium oven to a nice brown.

Note.— Only iron gem pans should be used for aërated breads, as it is largely the contrast between the hot irons and the cold batter which causes the expansion of the gems.

AËRATED WHEAT GEMS No. 1

1½ cups milk
½ teaspoon salt
3 tablespoons melted vegetable fat
1 teaspoon sugar
1¼ cups entire wheat flour
½ cup white flour

Make a batter of all the ingredients, in the evening, and set in a cold place overnight, the same as for oatmeal gems. Proceed to finish and bake the same as for oatmeal gems.

AËRATED WHEAT GEMS No. 2

Omit 1 tablespoon of the fat from gems No. 1, and add 1 whole egg, well beaten. Beat the batter a few hard strokes; then bake the same as for gems No. 1.

POP-OVERS

Scant 1 cup milk
¼ teaspoon salt
1 teaspoon vegetable fat
1 egg
⅔ cup entire wheat flour
⅓ cup white flour

Mix all the dry ingredients. Pour in half of the milk, and stir until smooth and free from lumps. Add the remaining milk,

the fat, and the egg slightly beaten, and beat vigorously for a few minutes, to incorporate air into the mixture. Pour into well oiled, hot iron gem pans, and bake about 30 minutes, in a medium oven. Pop-overs bake fairly well in small tins.

BRAN-FRUIT PUFFS

1 cup milk
1 tablespoon molasses
2 tablespoons melted vegetable fat
¼ teaspoon salt
¼ cup seedless raisins
1½ cups bran
½ cup white flour
1 egg separated

Put milk, egg yolk, molasses, salt, and fat into a bowl, and mix well. Mix the bran, the raisins, and the flour together, add the milk mixture, and stir until smooth. Beat the white stiff, fold in the bran mixture, and bake in oiled gem pans, in a medium slow oven, until a nice brown.

DIABETIC PUFFS (Without Flour)

⅔ cup milk
¼ teaspoon salt
2 teaspoons melted vegetable fat
⅓ cup finely chopped walnuts
1⅓ cups bran
2 eggs separated

Beat the yolks, add fat, salt, milk, walnuts, and bran, and mix smooth. Beat the whites stiff, and fold into the batter lightly. Bake in oiled gem pans, in a moderately slow oven, to a light brown color, as the materials included require little cooking, except to hold up the texture, and for flavor.

CORN BREAD

2 cups corn meal
3 tablespoons flour
Scant 2 teaspoons salt
3 tablespoons sugar
4 tablespoons vegetable fat
2 cups boiling water
A little cold water to thin to right consistency
2 eggs separated

Mix all the dry ingredients thoroughly in a bowl, add the fat, pour on the boiling water in a slow stream, stirring constantly. Add a little cold water as needed, to make a medium, smooth batter. Beat the whites until they are stiff and dry. Beat the yolks, and fold them into the beaten whites. Into this, work the corn mixture, and mix, using the folding motion. Pour into a shallow oiled baking pan, and bake in a quick oven. Success in making this bread will depend largely on having the wate-

boiling hot, and pouring it over the meal in a slow stream, as too rapid pouring will dissolve the starch granules, causing it to absorb too much water, and as a result, the bread will not be light when baked.

CORN DODGERS

1 cup corn meal
1 tablespoon vegetable fat
½ teaspoon salt
2 teaspoons sugar
1 cup boiling water
Cold milk or canned milk

Mix all the dry ingredients, add the fat, pour on the boiling water all at once, and stir smooth. Add just enough cold milk or canned milk to make the batter of a consistency barely to drop from a spoon, but not to run. Drop from the side of a large spoon, into an oiled baking pan, in oblong shapes, and bake in a quick oven.

Note.— If desired, water may be used instead of milk, a little more of the fat being added; but the dodgers will not then brown so readily as when milk is added at the last. If ground whole corn meal is used, less shortening and sugar are needed than for the ordinary degerminated commercial corn meal.

CORN CAKE

Take the above corn mixture, and spread it ¼ inch deep in an oiled baking pan, and bake in a hot oven.

JOHNNYCAKE

1 cup corn meal
2 tablespoons whole wheat flour
1 tablespoon sugar
1½ tablespoons vegetable fat
½ teaspoon salt
1 cup boiling milk
1 egg separated

Put the corn meal and the flour into the oven until lightly toasted. Mix all the dry ingredients. Add the fat, pour on the boiling milk all at once, and stir. Two or three tablespoons more of cold milk may be added if needed to make smooth, but the mixture must not be soft. Beat the white stiff. Beat the yolk, and fold it into the beaten white. Add the corn mixture, and mix, using the folding motion. Drop from the side of a spoon into an oiled pan, in oblong shapes, leaving space between, and bake in a quick oven.

HOT CAKES

⅔ cup coarse zwieback crumbs
3 tablespoons flour
¼ teaspoon salt
1 teaspoon sugar
2 eggs
1 cup warm milk

Heat the milk to about 115°. Mix all the dry ingredients well, pour the milk over them, and let stand 10 minutes. Separate the eggs. Beat the yolks, and stir them into the crumb mixture. Beat the whites stiff, fold the crumb mixture into the beaten whites, and bake on an oiled soapstone griddle.

SODALESS PANCAKES

1 cup dry, untoasted bread crumbs
1½ cups hot milk
½ cup cold milk
¼ teaspoon salt
2 eggs

Dry pieces of stale bread without putting into the oven, and grind through a food mill. Put the crumbs and the salt into a bowl, and pour over them the hot milk. Add the cold milk, and set aside. Beat the eggs with a Dover beater until thick; then fold into the crumb mixture, and bake on an oiled griddle, or in a heavy skillet. If zwieback or toasted bread crumbs are used, blend 1 tablespoon flour with the crumbs, to prevent crumbling.

DOUGH BREADS

Success in making appetizing dough breads depends largely upon mixing the dough so as not to get any of the flour too wet. If the dough is too soft — that is, if the flour gets "water soaked" — it will not have a nice grain, and it will be harder than when properly mixed. A good recipe for a beginner, is one using part white flour, as this is more easily handled. When entire wheat flour alone is used, the dough must of necessity be considerably softer, and still not be too wet.

WHEAT STICKS

1 cup white flour
½ cup entire wheat flour
½ teaspoon salt
2 teaspoons sugar
1½ tablespoons vegetable oil
Scant ⅓ cup water

Put the flour, the salt, the sugar, and the oil into a bowl, and rub between the finger tips to distribute the oil evenly. Pour in

the liquid in a very slow stream, stirring constantly with a fork, and remove the portions as they stick together, to avoid getting any of the flour too wet. Mix all into a comparatively stiff dough, knead on the board for a few moments, folding it over and over, and pressing together; then rôll out to ½-inch thickness. Cut into long strips about ⅓ inch in width, roll each strip slightly on the board to remove the sharp edges, then cut crosswise into 3-inch lengths. Lay in a baking pan, leaving a little space between, and bake in a medium oven, to a very light brown color.

CREAM ROLLS

1⅓ cups sifted white flour
⅔ cup entire wheat flour
½ teaspoon salt
1 teaspoon sugar
⅓ cup rich cream
⅓ cup cold water

Add the water to the cream, and mix well. Mix all the dry ingredients in a bowl, add the wetting very slowly, and mix the same as for wheat sticks. Roll and cut the same as for wheat sticks, and bake to a light brown color.

ENTIRE WHEAT ROLLS

2 cups entire wheat flour (ground fine)
½ teaspoon salt
4 tablespoons solid vegetable fat
2 teaspoons sugar (or 2 tablespoons meltose)
About ⅔ cup cold water

Mix the dry ingredients in a bowl. Add the fat, and work it into the flour with the tips of the fingers. Add the water slowly, stirring constantly with a silver fork, and work into a medium dough (softer than for the preceding recipes). Lay on a board and knead, folding it over and over, and pressing together to inclose air; or it may be put three or four times through a food chopper set with a coarse knife, instead of the kneading. Roll out to ½-inch thickness, cut into strips ½ inch in width, and roll each piece slightly, to remove the sharp edges. Cut crosswise into 3-inch lengths, lay in a baking pan, leaving a little space between, and bake in a medium oven about 20 minutes or more, to a very light brown color.

ENTIRE WHEAT BISCUIT

Use the above recipe for rolls, cut with a biscuit cutter, lay in a baking pan, and bake the same as for wheat rolls.

FAVORITE WHEAT BISCUIT

3 cups entire wheat flour
Scant 1 teaspoon salt
4 tablespoons solid vegetable fat
2 tablespoons sugar or 3 of meltose
1 egg, well beaten
About ⅔ cup cold water

Beat the egg with a Dover beater, and add the cold water. Follow the directions for mixing the "wheat rolls," and bake the same as the foregoing recipes.

WALNUT STICKS

Add ⅓ cup of coarsely chopped walnuts to either of the foregoing recipes, in the mixing. Roll out the same as for wheat rolls or sticks, and bake to a very light brown color.

FRUIT CRISPS

1½ cups pastry flour
½ cup entire wheat flour
½ teaspoon salt
3 tablespoons sugar
2½ tablespoons vegetable fat
Scant ½ cup cold water
Sultana raisins or figs

Wash the raisins, and lift them out of the water. Put them on the fire with barely enough moisture to heat them through. As soon as the water is evaporated, remove them from the fire, and grind through a coarse food mill. Mix all the dry ingredients. Add the oil, and rub the flour between the hands to distribute the oil evenly. Add the water slowly, only sufficient to mix into a stiff dough, following directions for mixing cream rolls. Work the dough together, and roll out into a long strip, about the thickness of pie crust. Spread the fruit over half of the dough; then fold the remaining half over the fruit, and roll lightly with a rolling-pin to press the dough together. Cut into squares, prick with a fork, lay in a baking pan, and bake on the top grate of a hot oven, to a very light brown. Care must be used not to overcook this bread, as the fruit sugar burns very quickly. Remove from the oven before the fruit has had time to cook too much. These may be baked on the inverted bottom of a deep bake pan to advantage.

DATE ROLLS

Make pastry from the above recipe, roll out to the thickness of pie crust, cut into strips 2½ inches wide, moisten the back

edge of each strip, place stoned dates end to end in the middle of the strip, and fold up the front edge; then roll over until the edges meet, and cut into 3-inch lengths. Bake in a moderate oven until light brown.

CORN MEAL CRISPS

1 cup corn meal
1 cup pastry flour
½ teaspoon salt
1 tablespoon sugar
2 tablespoons vegetable fat
½ cup water

Mix all the dry ingredients, add the oil, and rub between the hands. Add the water, and mix to dough. Roll out ¼ inch thick, and cut with a biscuit cutter. Prick with a fork, and bake to a light brown.

RYE WAFERS

1 cup rye flour
1 cup pastry flour
2½ tablespoons vegetable fat
2 tablespoons sugar
½ teaspoon salt
Scant ½ cup water, or just enough to hold the flour together to stiff dough

Mix all the dry ingredients, add the oil, and rub the flour between the hands to distribute the oil through the flour. Add the water slowly, and mix the same as for wheat sticks. Roll out ¼ inch thick, cut with a biscuit cutter, prick with a fork, and bake to a light brown color.

RYE STICKS

Take the dough of the preceding recipe, and roll out ½ inch thick. Cut into long strips about ⅓ inch wide, then again crosswise into 3-inch lengths. Lay in a baking pan, leaving a little space between, and bake to a light brown color.

BUCKWHEAT STICKS

1 cup buckwheat flour
1 cup pastry flour
½ teaspoon salt
2½ tablespoons vegetable fat
2 tablespoons sugar
Scant ½ cup water

Mix and bake the same as for rye sticks.

BUCKWHEAT WAFERS

Roll out the dough of the preceding recipe to ¼ inch thick, cut with a biscuit cutter, prick with a fork, and bake to a light brown color.

COMMUNION BREAD

A careful study of the scriptures relating to the feast of the Passover, which was sacredly observed by God's people in days of old, together with those which speak of the institution of the Lord's Supper, shows conclusively that the bread used was of the unleavened kind. The grain used in the making of the flour, moreover, so far as is known, was ground entire, the white breads now in common use being but a modern invention.

In the strict sense of the word, white bread is not a true symbol of the body of the Lord. He is the great Life-giver; but white bread, if depended upon exclusively for food, leads to disease and premature death. In the times of old, special directions were given as to what should enter into the making of bread for sacramental purposes —"fine flour" "mingled with . . . beaten oil." (Exodus 29:40; Leviticus 2:1.) In the making of the following bread, it is necessary that the flour be ground *fine;* and if the directions are followed, the bread will be tender, and of a good flavor.

COMMUNION BREAD RECIPE

2 cups entire wheat flour (ground fine)
½ teaspoon salt
6 tablespoons of purest vegetable oil
9 tablespoons cold water

Add the salt to the oil in a round bowl, and pour in the water in a very slow stream, beating constantly with a silver fork until thick and white (a temporary emulsion). Pour onto the flour all at once, and mix lightly into a dough. Turn out on a floured board and knead, folding it over and over to inclose air, and pounding it with a wooden mallet (a wooden potato masher is excellent) until quite elastic, which takes about 5 or 6 minutes. Roll out to the thickness of pie crust, mark with a dull knife into ¾-inch squares, lay in a baking pan, and bake in a medium *slow* oven. Avoid browning it, except a slight tinge, as browning gives it a strong flavor.

XIV. SOUPS

"My appetite comes to me when eating."

Soups may be divided into two classes:

First, broths, or thin soups, to which may be added cooked grains or vegetables cut in various shapes and sizes for garniture and to give variety and flavor. While these thin soups are lacking in nourishing qualities found in those made of the more solid foods, they are of value for their richness in mineral salts, and for the stimulating effect they have on the appetite. Thus when taken at the beginning of the meal, and in small quantity, they may aid in the digestion of the more solid foods.

Second, those soups which usually have as their basis cooked cereals, legumes, or vegetables forced through a strainer, and thinned with the liquid in which they were cooked, or with milk or cream, or both milk and cream. Like all other starchy foods, soups require the action of saliva for proper digestion, and when eaten slowly with some dry food, such as crackers, sticks, *croutons,* etc., are both appetizing and nourishing.

SPRING VEGETABLE, JULIENNE

½ cup carrot
½ cup turnip
1 stalk celery
½ small onion
1 cup new peas, or string beans, cauliflowerets, or any fresh vegetable in season
1 cup shredded potato
1 tomato
2 tablespoons vegetable butter
7 cups cold liquid, preferably one half vegetable broth of some kind, and the rest water
Chopped parsley
Salt to taste

Cut all the coarse vegetables into very fine shreds *(julienne)*, about 1-inch lengths. Put the coarse vegetables, except the potato, into a saucepan with the butter and 2 teaspoons salt, and let them steam over a medium slow fire for 10 minutes, stirring frequently to avoid scorching. This steaming brings out and blends the flavors. Add the shredded potato, the tomato, and any other of the finer vegetables used, and the liquid, with salt to taste, and let boil until all the vegetables are thoroughly cooked. Add chopped parsley, and serve.

Note.— Adding a few beet leaves (tied together with a cord) while boiling, will give a nice color. Remove as soon as the desired color is obtained. The red outside skins of onions may be used for the same purpose.

FAMILY VEGETABLE SOUP No. 1

Take ⅔ cup each of any 4 or 5 of the following coarse vegetables, measured after being ground through a food mill: carrot, turnip, cabbage, spinach, okra, salsify, string beans, peas, corn, etc. Add ½ small onion cut fine, 2 stalks of celery (if at hand), and put into a covered saucepan with 2 tablespoons vegetable butter and 2 teaspoons salt, and let simmer over a medium slow fire for 10 minutes. Add 1 cup diced raw potato, 1 peeled and cut tomato, and 7 cups of cold liquid, preferably some kind of vegetable broth in part, and let boil until well done. If it becomes too thick from the reduction of the liquid in boiling, add liquid to suit, boil up, salt to taste, add chopped parsley, and serve.

FAMILY VEGETABLE SOUP No. 2

Prepare and cook the vegetables the same as for No. 1, except that only sufficient water should be used to cook the vegetables well done, and the liquid should be reduced down well. Add enough hot milk (part cream) to make the desired consistency to dish up nicely, reheat, salt to taste, and serve.

SCOTCH VEGETABLE SOUP

Soak ½ cup pearl barley overnight, rinse well, drain, add 3 cups water, bring to a boil, and cook in a fireless cooker, or over an open fire, until very tender. Prepare and braise the vegetables

the same as for vegetable soup No. 1. Add 2 tablespoons browned flour, and stir. Add all the liquid, and boil 30 minutes. Add the cooked barley, salt to taste, and let simmer for 15 minutes. Add chopped parsley, and serve.

VEGETABLE BROTH No. 1

2 cups sliced carrot
2 cups turnip
1 cup cabbage or spinach
3 stalks celery
1 onion
1 sprig of parsley
2 cups raw potato
1 tomato
3 quarts cold water
Salt to taste

Chop all the vegetables, or slice very fine. Add the cold water, salt, and let simmer for about 3 hours. Add a few beet leaves or 2 tablespoons of roasted and crushed soy beans during the cooking, to give a good color. Strain, salt to taste, and serve plain; or garnish with soup royale and chopped parsley, and serve.

VEGETABLE BROTH No. 2

Take broth left after cooking young spinach or new asparagus or peas, season with a little rich cream or canned milk, and serve with toasted crackers.

VEGETABLE CHOWDER (Washington)

2 cups raw potato, sliced very thin
1 cup stewed corn
2 cups stewed tomato
2 tablespoons vegetable butter
4 tablespoons chopped onion
3 stalks celery, cut fine
A sprinkle of savory
Salt to taste
4 cups water
1½ cups hot cream (or 1½ cups cold canned milk)

Put butter, onion, celery, and savory into a saucepan, and let simmer over the fire for a few minutes, but do not brown. Add the potato and the water, salt to taste, and let boil continuously for 10 minutes; then add the corn and the tomato, and let boil gently for 20 minutes. Lastly, and just before serving, add the hot cream or milk.

POTATO WITH DUMPLINGS

2 cups finely diced raw potato
1 cup diced bleached lettuce
2 teaspoons chopped onion
1 tablespoon vegetable butter
6 cups water
Salt

Add potato, lettuce, onion, butter, and 2 teaspoons salt to the cold water, and bring to a boil. Let boil gently for 10 minutes, then add the following mixture for dumplings:

Dumplings

1 egg yolk
2 teaspoons melted vegetable butter
¼ cup milk
A few grains of salt
½ cup white flour

Mix into a smooth batter, and pour into a colander over the boiling soup, and force very slowly through, so that as the droplets fall into the boiling soup, they will not stick together. Cover, and let boil gently for 20 minutes or more. Salt to taste, add chopped parsley, and serve.

FARMERS' FAVORITE

¾ cup rich sour cream
½ cup macaroni raw
1 small onion
1 stalk celery
½ cup finely chopped carrot
1½ cups diced potato
Chopped parsley
Salt

Cook the cream down in a skillet, stirring constantly until the oil and the albumen separate and the albumen turns a light brown color. (The degree of browning determines the flavor of the soup.) Add the diced carrot, onion, and celery, and stir over the fire for a few minutes, but do not brown. Add 4 cups cold water, the diced potato, and salt, and let cook until the vegetables are thoroughly done. Drop the macaroni into 3 cups of boiling water, and cook until well done. Add the macaroni water to the vegetable soup. Then lay the macaroni on a board and cut into small rings. Drop into the soup, and boil up well. Add the chopped parsley, and serve.

BEAN SOUP ARMY STYLE

1 cup navy beans
7 cups water
⅔ cup diced carrot
⅓ cup diced onion
1 tablespoon vegetable butter
Chopped parsley
Salt to taste

Wash the beans thoroughly, lift out of the water, put into a saucepan with the cold water, and bring to a boil. Let simmer gently until thoroughly done. Add salt while cooking. Put the

diced carrot and onion into a saucepan, with the vegetable butter and ¼ cup water, and let simmer until the water is absorbed, stirring often. Add 2 cups of broth from the beans, salt to taste, and let the vegetables simmer until well cooked. Add them to the bean soup, boil up well, add the chopped parsley, and serve.

NOODLE SOUP

Wash 1 cup Lima beans, add 1 small onion, 1 carrot, 1 stalk celery, 7 cups cold water, 1 tablespoon vegetable butter, 2 teaspoons salt, and let boil gently until the beans are done. To the yolk of 1 egg add 1 tablespoon milk and a sprinkle of salt, and mix well. Add ⅔ cup white flour, or enough to make a stiff dough, and roll out on a well floured board to the thickness of paper. Let dry for a few minutes, then cut into strips ¾ inch in width. Pile these, and shred crosswise into very fine shreds. Sprinkle into the boiling bean soup, having first removed the vegetables, and let boil gently for 15 minutes. Add a little chopped parsley, salt to taste, and serve.

PURÉE OF BROWN BEANS

Wash 1 cup of brown beans, add 1 medium onion cut in pieces, 2 carrots left whole, 3 stalks celery, 2 teaspoons salt, 1½ tablespoons vegetable butter, 8 cups water, and let boil continuously until the beans are well done. Add 1 outer slice from a loaf of stale bread, and 1 large tomato cut into quarters, and let continue to boil for 15 minutes. Add more hot water if necessary. Remove the carrots, and mash all the rest through a colander. Reheat, salt to taste, and serve with bread *croutons*. Add a little cream or canned milk if desired.

PURÉE OF LENTIL SOUP

Prepare and cook the same as *purée* of brown beans, using 1¼ cups lentils in the place of 1 cup of brown beans.

TOMATO OKRA WITH RICE

¼ cup rice
2 cups sliced okra pods
3 tablespoons diced onion
2 stalks celery
½ sweet bell pepper
1½ tablespoons vegetable butter
3 cups stewed tomato
5 cups water
Salt to taste

Brown the rice to a light golden brown in a frying pan over the open fire, add the water, and bring to a boil. Cut the celery and the bell pepper into small dice, and put into a saucepan, with the onion and the butter, and let simmer for 10 minutes, stirring often, but do not brown. Add the tomato, boil up, and pour into the boiling rice. Salt to taste, and when the rice is tender, add the sliced okra pods. Let boil until well done, add chopped parsley, and serve.

TOMATO BISQUE

3 cups stewed tomato
4 cups vegetable broth
4 tablespoons chopped onion
A large sprig of parsley
2½ tablespoons vegetable butter
2 tablespoons nut butter
1 small bay leaf
A sprinkle of thyme
Salt to taste

Put vegetable butter, parsley, onion, bay leaf, and thyme into a small saucepan, and let simmer for a few minutes. Add all the liquids, and boil gently for 30 minutes. Dissolve the nut butter in a small quantity of warm water, and add to the soup. Mix well, salt to taste, strain, and serve.

POTTAGE ST. GERMAIN

2 cups sliced raw potato
1 can green peas
3 stalks celery
2 tablespoons diced onion
2 tablespoons vegetable butter
6 cups water
Salt to taste

Add sliced potato, celery, onion, butter, and 2 teaspoons salt to the cold water, and boil until the vegetables are well cooked. Drain the green (canned) peas, and throw the water away. Add the peas to the boiling soup, and continue boiling for a few minutes. Force through a colander, then through a finer strainer. Salt to taste, reheat, and serve with bread *croutons*. A little cream or canned milk is an improvement.

GOLD SOUP

2 cups scraped and thinly sliced carrot
1 small onion sliced
2 cups thinly sliced raw potato
2 stalks of celery (if at hand)
1 large sprig parsley
1½ tablespoons vegetable butter
2 toasted white crackers (rolled fine)
5 cups cold water
1 cup thin cream or canned milk
Salt to taste

Put carrot, onion, parsley, and butter into a saucepan, add ½ cup water, and let cook slowly under cover until dry, stirring often to prevent scorching. Add water, celery, potato, salt to taste, and let boil rapidly until the vegetables are well done and broken up. Remove the parsley, and mash through a colander. Add the cracker crumbs, and boil up. Add the hot cream or cold canned milk, strain again, salt to taste, and serve.

CREAM OF BARLEY

½ cup pearl barley (soaked in water overnight)
7 cups water
1 onion
1 carrot
2 stalks celery
2 cups cream or canned milk
Salt to taste

Drain the barley, add water, carrot, onion, celery, and a teaspoon of salt, and cook until well done and the liquid reduced to about 4 cups. Remove the onion and the carrot, drain, and mash the greater portion of the barley through a colander, reserving about half a cup for garniture for the soup. Add hot cream to the barley pulp, and salt to taste. Add the cooked barley, reheat, and serve. (If canned milk is used, it must not be boiled.)

FAMILY POTATO SOUP

3 cups sliced raw potato
2 teaspoons chopped onion
2½ teaspoons salt
2 tablespoons vegetable butter
2 cups rich milk
Chopped parsley
6 cups cold water

Put water, potato, butter, onion, and salt into a saucepan, and let boil until the potato is well done and broken. Add the hot milk, or thin cream, and beat the soup thoroughly, to break up the potatoes. Salt to taste, add chopped parsley, and serve.

CREAM OF LIMA BEANS

1 cup Lima beans
1 onion
1 stalk celery
6 cups water
1½ cups cream
Salt to taste

Wash the beans thoroughly, add the other ingredients, and let cook until extra well done. Remove the onion, and mash the rest through a colander. Season with hot cream, add salt to taste, and serve with *croutons*. If canned milk is used, it must be added unheated.

CREAM OF VEGETABLE OYSTER

3 cups sliced vegetable oyster
5 cups water
1 teaspoon chopped onion
2 tablespoons vegetable butter
1 tablespoon flour
2 cups hot milk
Salt to taste

Wash and scrape the salsify, and drop into cold water. Slice very thin, add the water, the onion, and 2 teaspoons salt, and boil until very well done, and the liquid reduced to about 3 cups. Take out about ⅓ of the cooked vegetable, to be used as a garniture for the soup, and mash the rest through a colander. Rub the butter and the flour together in a small saucepan over the fire, add a little of the hot milk, and stir smooth. Add the remainder of the milk, and bring to a boil. Add this to the mashed vegetable oyster, and strain through a medium strainer. Add the cooked, sliced vegetable oysters, reheat, salt to taste, and serve.

CREAM OF LETTUCE

2 cups sliced raw potato
4 cups cold water
1 cup shredded lettuce (pressed down)
1 tablespoon chopped onion
1½ teaspoons salt
2 tablespoons vegetable butter
2 cups hot milk

Add potato, onion, and salt to the water, and bring to a boil. When the potato is about half done, add the lettuce, and cook rapidly until the vegetables are well done and broken. Mash through a colander. Add the butter to the hot milk, and mix with the soup. Salt to taste, put again through a coarse strainer, and serve. If cream is used, omit the milk and the butter.

CREAM OF GREEN PEAS No. 1

Cook new peas in sufficient water to cover, adding salt to taste. Mash through a colander, add hot rich cream to suit, and serve with *croutons*. If canned peas are used, drain, throw the water away, add hot water barely to cover, bring to a boil, and proceed the same as with new peas.

CREAM OF GREEN PEAS No. 2

1 can green peas (drained)
2 cups water
1 teaspoon onion
1½ tablespoons vegetable butter
1 tablespoon flour
2 cups milk
Salt to taste

Drain the canned peas, add the fresh water and the onion, and let boil gently for 10 minutes; then rub through a colander. Heat the milk, rub the flour and the butter together in a saucepan over the fire, add a little of the hot milk, and stir until smooth. Add the remainder of the milk, and bring to a boil. Add the peas *purée,* salt to taste, strain again through a strainer, and serve with *croutons.*

CREAM OF CORN No. 1

1 can corn
2½ cups water
1½ tablespoons vegetable butter
1 tablespoon flour
2 cups hot milk
Salt to taste

Have the corn ground through a food mill, add the water, and let boil gently for 15 minutes. Rub the flour and the butter together in a saucepan over the fire, add a little of the milk, and stir smooth; then add the rest of the milk, and bring to a boil. Add the corn mixture, salt to taste, reheat, strain, and serve.

CREAM OF CORN No. 2

Prepare the corn the same as for No. 1, but omit the flour and butter, and season with good cream or canned milk.

CREAM OF TOMATO No. 1

2 cups tomato pulp
1⅓ cups cream
2 teaspoons flour
Salt

Heat the tomato gradually to the boiling point, and thicken with the flour made smooth with a little cold water. Heat the cream in a double boiler; then set on the table and pour the tomato gradually into the cream, stirring constantly. Salt to taste, strain, and serve.

CREAM OF TOMATO No. 2

2 cups tomato pulp
1 cup water
2 teaspoons vegetable butter
1 tablespoon cream roast flour
1 cup canned milk
Salt to taste

Bring tomato, water, and butter to a boil. Thicken slightly with the flour made smooth with a little cold tomato or water. Salt to taste, add canned milk (unheated), strain, and serve.

CREAM OF SPINACH

Remove the dry leaves, if any, from 3 or 4 bunches of spinach, and wash in several waters. Drain, add boiling water barely to cover, and let boil quite rapidly until very tender, adding salt to taste. Rub together 2 tablespoons vegetable butter and 2 tablespoons flour in a saucepan over the fire, add a little of the hot broth, and stir smooth. Add this to the spinach, and boil up. Mash through a colander or a coarse strainer, and season with hot cream or cold canned milk. An onion may be boiled in the spinach if desired.

FRUIT SOUP No. 1

1 cup water
2 tablespoons sago
1 teaspoon lemon juice
1 cup blackberry or strawberry juice
Sugar to taste

Wash the sago in cold water, and drain well. Bring the fresh water to a boil, add the sago, and cook gently until clear. Add the fruit juices, also hot, and sweeten to taste. Very nice served cold.

FRUIT SOUP No. 2

2 cups grape or berry juice
½ cup stewed raisins
6 cooked prunes
3 tablespoons sago
Sugar to taste
2 cups water

Wash the sago the same as for the preceding, and put to cook in 2 cups of hot water until the sago is clear. Stone and quarter the prunes, mix all the ingredients, and sweeten to taste.

XV.

ENTRÉES AND NOON-MEAL DISHES

"Study simplicity in the number of dishes, and variety in the character of the meals."

To those seeking to provide a balanced diet, a few suggestions may be helpful. In many homes, meat is regarded as the chief part of the meal; and, naturally, foods that are prepared to take the place of meat are denominated "meat substitutes." A wrong impression often associated with the use of this word, is that meat is a standard by which to judge the merits of foods that are to take its place in the dietary.

The nutriment of meat being practically all protein, a well balanced meal is nearly impossible when meat is eaten. There is almost certain to be an excess of the protein element in such a meal. This excess of protein, as stated in a preceding chapter, tends to bring about early degeneracy of the human body and to shorten life. Therefore our aim should not be to bring the percentage of protein up to that contained in meat; for this would only serve to defeat one of the main objects in view,— that of properly balancing the food elements in a meal.

A comparison between the body and the locomotive engine serves as an illustration in a study of the fuel value of foods. While iron is essential to keep the engine in repair, the greatest demand will be for fuel with which to heat the boiler. So in the vital economy, protein is essential for the growth and repair of tissue; but beyond this, it is inferior to carbohydrates and fats. And as different kinds of wood and coal are capable of giving off different degrees of heat, and also giving off that heat in longer or shorter periods of time, so with different kinds of foodstuffs. Also, certain kinds of coal leave a residue of clinkers

to be raked out of the furnace; so when a person overeats of protein foods, there is an extra amount of work for the kidneys, to rid the system of accumulated poisons.

For practical purposes, it may be said that grains — wheat, rice, corn, oats — have an average nutritive value of over 80%; legumes — dried peas, beans, lentils, and peanuts — about 85%; nuts — almonds, filberts, walnuts — over 90%; dried fruits — dates, figs, raisins — about 80%. Thus we find in grains, fruits, and nuts an ample supply of all-round building food.

The various nut foods on the market, composed chiefly of grains and nuts, contain the nutritive elements of food in a very concentrated form, and should not be eaten too freely, but should be combined with other foods. A few examples of how they may be made into appetizing dishes will be given in some of the following recipes. Other nut foods of a similar nature may be used in place of the ones given, if desired.

BAKED DRESSING No. 1

3 cups soaked stale bread
2½ tablespoons vegetable butter
3 tablespoons diced onion
1 tablespoon chopped parsley
1 tablespoon brown flour
1 egg
Sage and marjoram
½ cup milk
Salt to taste

Have the bread soaked in cold water until soft all the way through. Put diced onion, parsley, butter, and savory into a small pan, and let simmer for a few moments, but do not brown. Add the brown flour, and mix. Then add the milk, and stir smooth. Press the bread out, not too dry. Beat the egg slightly, and mix all the ingredients lightly with a silver fork. Avoid breaking up the bread too much. Put into an oiled baking pan, and bake until set and a nice brown.

BAKED DRESSING No. 2 (Without Eggs)

3 cups soaked stale bread
2½ tablespoons vegetable butter
3 tablespoons chopped onion
2 tablespoons chopped parsley
Scant ½ teaspoon sage or marjoram
3 tablespoons browned flour
¾ cup milk
Salt to taste

Put butter, savory, onion, and parsley into a small saucepan, and let simmer for a few minutes, but do not brown. Add the browned flour, and mix. Add the milk, and stir until smooth and thick. Press the bread out fairly well, and mix all the ingredients, using a silver fork. Salt to taste, and bake in an oiled pan, to a nice brown.

BAKED DRESSING No. 3

1 quart of stale bread, broken into rather small pieces
3 cups hot milk
2½ tablespoons vegetable butter
4 tablespoons diced onion
1 teaspoon salt
½ teaspoon sage
2 eggs

Put the butter, the onion, and the savory into a small saucepan, and let simmer over the fire for a few minutes, to soften the onion. Add the milk and the salt, bring to a boil, and pour over the broken bread. Let stand undisturbed for 10 minutes; then pour into an oiled baking pan. Beat the eggs until light, and pour over the soaked bread, working them into the bread carefully with the points of a fork. Bake to a light brown color, and serve

HOMEMADE NUTTOSE

1 cup tomato pulp
⅔ cup warm water
⅓ cup flour
⅓ cup cornstarch
1 teaspoon salt
4 tablespoons nut butter
¼ teaspoon each of sage and marjoram

Add the savory and the salt to the nut butter, and thin with the water, adding a little at a time until you have a smooth cream. Wet the flour and the starch with the tomato, adding it gradually, so as to avoid lumping. Mix, put through a strainer into an oiled double boiler, and cook from 2 to 3 hours. One half of the flour used may be Graham if desired.

SAVORY NUT AND POTATO HASH

3 cups diced cold boiled potato
1½ cups diced cold dressing or ⅔ cup diced nuttose or nut cero
3 tablespoons diced onion
2 tablespoons vegetable butter
¼ teaspoon sage or marjoram
2 tablespoons browned flour
Scant 1 cup milk
Salt to taste

Put the butter, the onion, and the savory into a small saucepan, and stir over the fire for a few minutes, but do not brown. Add the browned flour, then a small quantity of the milk, and

stir smooth. Add the rest of the milk, and boil up. Salt to taste, and add the diced dressing or nut food to the gravy. Sprinkle the diced potatoes with a little salt; then pour over them the hot mixture, and mix lightly. Put into an oiled baking pan, sprinkle a little cream or small bits of vegetable butter over the top, and bake to a light brown.

LENTIL AND POTATO HASH

Use the same proportions of ingredients as in nut and potato hash, only substitute 1⅓ cups cooked lentils, well drained, in the place of the diced dressing or nut food, and make the same as for nut and potato hash.

ROASTED POTATO WITH DRESSING

Cook medium sized pared potatoes in a saucepan until about half done. Drain, and lay in an oiled baking pan. Sprinkle with salt, then with flour, and brush over each potato with an oiled brush. Put into a quick oven, and bake until partly browned; then fill in between the potatoes with either of the foregoing dressings, and finish baking together. Serve with brown gravy.

ROAST NUT MEAT WITH DRESSING

Open a pound can of nut cero or other nut food, split through the center lengthwise, lay in an oiled pan, brush the top over with oil or vegetable butter, and put in the oven until a slight crust forms on the meat. Then pour over it a thin brown sauce, and continue to bake for ½ hour, basting it now and then over the top with gravy. When done, lift out on a carving board, slice, and serve with either of the preceding dressings, as follows: Put a spoonful of dressing on the platter, lay a slice of nut food on the top, and pour a spoonful of gravy on half of the food. Serve with a sprig of parsley at one end, and a small piece of cranberry jelly, if at hand.

NUT AND POTATO PIE

2 cups sliced raw potato
1½ cups cold water
1 teaspoon onion
1¼ teaspoons salt
1 tablespoon vegetable butter
1 scant tablespoon flour
Chopped parsley
Nut food or baked dressing cold, sliced
Hard-boiled egg
Pie crust

Add sliced potato, onion, and salt to the water, and cook until done. Drain, and lay the sliced potato into an oiled baking pan. Put the butter and the flour into a small saucepan, and mix; then add a little of the potato water, and stir smooth. Add the rest of the liquid, boil up, and pour the sauce over the sliced potato. Lay a few slices of hard-boiled egg, and the same of nut cero or sliced cold dressing, over the potato, and sprinkle lightly with chopped parsley over all. Cover with thin pie crust, mark into squares with a knife, brush over with milk, and bake to a nice brown.

VEGETARIAN POT ROAST

4 cups stale bread cut into dice
2 cups hot milk
2 tablespoons vegetable fat
4 tablespoons chopped onion
Scant ½ teaspoon sage
2 cups well cooked brown beans, or lentils, well drained
4 tablespoons flour
2 eggs
Salt
1 cup coarsely chopped walnuts

Put the onion, the savory, and the fat into a small saucepan, and let simmer over the fire for a few minutes, to soften the onion, but do not brown. Add ½ teaspoon salt and the milk. Bring to a boil, and pour over the diced bread. Sift the flour into a frying pan, and stir continuously over the fire until a light brown color. Add the chopped nuts, and continue stirring until they are warmed through, but not browned at all. Beat the eggs slightly, and add to the mixture; then add the browned flour and nuts, and mix. Have the cooked beans or lentils drained, and mashed very fine or put through a colander, and blend with the above mixture, with salt to taste. Pack in a well oiled (2-pound) bread tin, and bake in a medium oven until set and a nice brown. Set aside for 30 minutes to cool partially; then turn out in an oiled baking pan, and pour over it a thin brown gravy, and bake in a good oven for ½ hour, basting it over the top occasionally with the gravy. Serve with cranberry sauce or baked apple.

WALNUT ROAST

1 cup zwieback crumbs
1 cup milk
½ cup ground walnuts
1 cup steamed rice
3 tablespoons chopped onion
1½ tablespoons vegetable butter
1 tablespoon flour
1 egg
1 tablespoon chopped parsley

Pour ¾ cup of the milk over the crumbs, and let stand for 5 minutes. Put butter, onion, parsley, and a pinch of savory, if desired, into a small saucepan, and let simmer until the onion is softened, but not browned. Add the flour, and stir; then the rest of the milk, and stir smooth. Add the slightly beaten egg, the ground walnuts, and salt to taste, and mix well. Add the soaked crumbs, and lastly fold in the steamed rice with a fork, press gently into an oiled bread tin or small baking pan, and bake to a nice brown. This loaf may be turned out into an oiled baking pan, when done, and basted with brown gravy, the same as pot roast, if desired.

IMPERIAL ROAST

2 cups diced stale bread
2 cups steamed rice
⅔ cup chopped ripe olives
1 cup chopped walnuts
1 raw egg
2 chopped hard-boiled eggs
1½ tablespoons vegetable fat
2 tablespoons flour
2 stalks diced celery
4 tablespoons chopped onion
1½ cups milk
Savory and salt to taste

Put the flour and the fat into a small saucepan, and stir over the fire until of a light brown color. Add the savory, the onion, and the celery, and stir for a few moments. Then add ½ cup of the milk, and stir smooth. Add the remainder of the milk, bring to a boil, salt to taste, pour over the diced bread, and let stand until cold. Beat the egg, and mix all the ingredients except the rice, which is folded in last, using a fork. Press lightly into one large, or two small, previously oiled bread tins, and bake until lightly browned on top. Serve plain, or with cranberry sauce or gravy, or with both.

SCALLOPED POTATO AND NUTTOSE

Put sliced raw potatoes about ¾ of an inch in depth into an oiled baking pan. Sprinkle lightly with salt, and lay very thin slices of nuttose or nut cero over the top. Put in another layer of sliced potato, and another layer of sliced nut food; then pour over these enough thin brown gravy barely to cover the potatoes. Cover with another baking pan of the same size, and bake in a good oven until the potatoes are tender; then remove the top pan and brown lightly.

POTATO AND NOODLE STEW

4 medium large potatoes
2 medium sized onions
3 ripe tomatoes
6 cups water
2 tablespoons vegetable butter
1 teaspoon salt
Noodles

Cut the potatoes and the onions into long, slender pieces, add water, salt, and butter, and let boil gently for 5 minutes. Add the peeled and quartered tomatoes, and when brought to a boil, sprinkle in gradually the noodles, as given on page 264. Cover, and let boil gently for 15 or 20 minutes; then set on the edge of the stove until needed.

LENTIL AND POTATO STEW

Wash 1 cup of lentils, and cook with salt to taste, until tender but not broken. Pare 3 medium sized potatoes, cut them into long, slender pieces (4 cups by measure), and put into a saucepan with 1 large onion cut in pieces, or several small ones. Add 2 tablespoons vegetable butter, and the broth drained from the cooked lentils, with additional water to make 3 cups of liquid. Add salt to taste, and let boil gently until the vegetables are tender. When satisfied that they are seasoned to suit, drop in the cooked lentils and shake together. Reheat and serve. The amount of lentils may be increased with the same amount of potato, to suit individual taste.

POTATO STEW WITH DUMPLINGS

Stew

2 cups raw potato cut into ½-inch cubes
2½ cups cold water
1 teaspoon chopped onion
1¼ teaspoons salt
2 tablespoons vegetable butter
2 tablespoons flour

Bring water, potato, onion, and salt, to a boil. Rub the butter and the flour together in a small saucepan over the fire. Add a little of the potato water, and stir smooth. Add more water, boil up, and pour over the potato.

Dumplings

½ cup water
2 tablespoons vegetable butter
⅔ cup sifted pastry flour
2 eggs
A sprinkle of salt

Bring water, salt, and butter to a boil. Add the flour all at once, and stir over the fire until the mixture does not stick to the sides of the pan and is perfectly smooth. Set on the table, break in 1 whole egg, and stir with a spoon until the egg is completely absorbed in the paste, and the paste is smooth and thick. Add the other egg in like manner. Drop from the side of a tablespoon into the boiling stew, having first dipped the spoon into the hot liquid to avoid the dumplings' sticking to the spoon. Cover, and let boil gently for about 15 minutes, or until the potato is thoroughly done, and the gravy reduced to a nice consistency to dish up. Sprinkle with chopped parsley, if at hand.

SAVORY POTPIE

3 medium sized potatoes
1 medium sized carrot
1 onion
1½ cups cooked lentils
1½ tablespoons vegetable butter
3 tablespoons browned flour
¼ teaspoon sage
Pie crust
A sprinkle of parsley

Cut the vegetables into long, slender pieces. (The potato should measure 4 cups.) Put carrot, onion, 2 cups water, and 1 teaspoon salt into a saucepan, and let boil 10 minutes; then add the potato and an additional cup of cold water, and bring to a boil. Rub butter, savory, and browned flour together in a small saucepan over the fire until blended. Add a little of the liquid, and stir smooth. Add additional liquid, and pour it over the boiling vegetables. Salt to taste, and let boil slowly until well done; then add the cooked lentils, and shake together. Pour into an oiled baking pan, cover with pie crust, brush with milk, mark with a knife, and bake to a nice brown.

VEGETABLE GLUTEN STEW

3 cups raw potato, cut in slender pieces
1 cup carrot
1 cup young turnip
1 small onion, cut in quarters
2 teaspoons salt
2 tablespoons vegetable butter
4 tablespoons browned flour
1 cup gluten biscuit, broken up
4½ cups cold water

Crush the gluten biscuit, and put into a saucepan, together with carrot, turnip, onion, salt, and water, and let boil 10 minutes. Rub the butter and the flour together in a small saucepan over the fire,

adding the broth gradually, and stirring until free from lumps. Pour it over the boiling vegetables, add the raw potato, salt to taste, and let boil gently under cover until the vegetables are thoroughly cooked, and the gravy of a nice consistency to dish up. Sprinkle with chopped parsley, and serve.

RAGOUT (ra-goo') OF VEGETABLES WITH NOODLES

1½ cups carrot
1½ cups young turnip
3 cups raw potatoes (measured after being cut into slender pieces)
6 small onions
1 large tomato
2 tablespoons vegetable fat
3 tablespoons flour
A sprinkle of savory
3½ cups vegetable broth or water
Salt to taste

Braise carrot, turnip, and onion in a well oiled pan in a quick oven, or in a hot skillet over the open fire. Place in a saucepan with potato, tomato, and liquid, salt to taste, and bring to a boil. Brown the flour in the vegetable fat, in a frying pan, and add a sprinkle of savory, then a little of the liquid from the vegetables, and stir smooth. Add more of the liquid, and pour it over the boiling vegetables. Let boil gently under cover until well done, and the gravy is reduced to a nice consistency. Serve with plainly seasoned noodles.

VEGETARIAN IRISH STEW

1 cup carrot
1 cup turnip
2 cups raw potatoes (all cut into slender pieces)
6 small onions
2 tablespoons vegetable butter
2 tablespoons flour
⅔ cup diced nut food
3 cups cold water
Salt to taste

Put carrot, turnip, onions, and 2 teaspoons salt into a saucepan, add the water, and let boil 10 minutes; then add the potato, and bring to a boil. Rub the butter and the flour together in a small saucepan over the fire until blended. Add a little of the hot liquid, and stir smooth. Add more of the liquid, pour over the boiling vegetables, and let cook continuously until well done, and the gravy reduced to the proper consistency to dish up nicely. Put the nuttose or nut cero in an oiled pie tin into the oven, for a few minutes, stirring now and then. Add to the stew, shake together, sprinkle with chopped parsley, and serve.

BEAN AND MACARONI STEW

1 cup macaroni
1 cup Lima or navy beans
1 onion
1 medium sized ripe tomato
1½ tablespoons vegetable butter
Salt to taste

Wash the beans thoroughly. Add the onion, ½ teaspoon salt, and sufficient water to cook gently until done. Drain, add to the broth enough water to make 3 cups liquid, and bring to a boil. Add the broken macaroni, salt to taste, and let boil until done; then add the butter and the peeled and sliced tomato, and let simmer under cover until of a nice consistency to dish up. Add the cooked beans, shake together, reheat, and serve.

FAVORITE LENTIL PATTIES

2 cups cooked lentils, well drained and not too soft
3 tablespoons chopped onion
2 cups mashed potatoes (seasoned)
2 tablespoons vegetable butter
Scant ½ teaspoon sage or sweet marjoram

Put onion, savory, and vegetable butter into a small pan, and let simmer for a few minutes over the fire, to soften the onion, but do not brown. Add the cooked and drained lentils, shake together, and mix with the mashed potato. Form into small, round patty cakes, and brown lightly in a quick oven or in an oiled skillet.

RICE AND NUT PATTIES

2 cups steamed rice
1 cup zwieback crumbs
¾ cup milk
4 tablespoons chopped onion
Scant ½ teaspoon sage or sweet marjoram
1 tablespoon vegetable butter
Salt
1 cup coarsely chopped walnuts

Put onion, savory, and butter into a small pan, and let simmer over the fire, the same as for lentil patties. Add the milk and ½ teaspoon salt. Bring to a boil, and pour over the crumbs. Let stand 10 minutes; then add the chopped nuts, and mix in the steamed rice, using a silver fork, so as to mix lightly. Form into small patties, and brown the same as lentil patties; or it may be baked in the form of a loaf, if desired. *If used for a filling for stuffed peppers* (page 172), add an additional ½ tablespoon vegetable butter, and ½ cup diced bell pepper, when braising the onion at the beginning; then add 1 large ripe tomato cut small, or ⅓ cup stewed tomato, cook, and mix with the rice.

EGGPLANT SAUTÉ, FAMILY STYLE

1 medium sized eggplant
2 eggs
1 cup cracker crumbs or untoasted stale bread crumbs
Salt to taste

Pare and dice the eggplant, and cook in enough boiling water, with salt to taste, to make it tender. Drain well. Beat the eggs with 1 tablespoon melted vegetable butter, and add to the eggplant. Add the crumbs, mix well, and pour into a well oiled skillet. Heat gradually, turning with a spatula now and then, until partly browned and thoroughly heated through, and serve immediately.

BAKED SAVORY EGGPLANT

Pare and dice 1 medium sized eggplant, and cook in slightly salted water until tender; then drain, saving the water. Put 1 tablespoon chopped onion, ½ cup diced sweet pepper, 2 tablespoons chopped parsley, ¼ teaspoon sage or sweet marjoram, and 2 tablespoons vegetable butter into a small saucepan, and let simmer over the fire for a few minutes, but do not brown. Add 3 tablespoons browned flour, and stir; then 1 cup of the liquid from the cooked eggplant, and cook to a smooth gravy. Then add the cooked eggplant. Line an oiled baking pan with thin slices of sparsely buttered bread, and pour over it one half of the eggplant mixture. Cover with sliced raw tomatoes; then add another layer each of bread, eggplant, and tomato. Rub a slice of bread through a colander or strainer over the top, and press down with a spoon, to moisten the crumbs. Bake in a medium oven for 30 or 40 minutes.

BEANS WITH NOODLES

Wash 1 cup of navy beans, and cook gently until thoroughly done, adding salt while cooking. Drain, and add to the liquid enough water to make 3 cups. Add 2 teaspoons vegetable butter, and bring to a boil. Sprinkle in the noodles as given on page 264, and let boil gently for 15 minutes. Add the cooked beans, shake together, reheat, and serve.

BEAN AND POTATO PIE

Wash 1½ cups Lima beans, and cook gently, in plenty of water, with salt to taste. Drain, and add sufficient water to make

3 cups liquid. Add 3 cups sliced raw potatoes, and salt to taste, and let boil gently until the potatoes are tender. Stir 1 tablespoon vegetable butter with 1 tablespoon flour in a saucepan over the fire until blended, add a little of the broth, and stir smooth. Add more broth, and pour over the cooked potatoes. Add the cooked beans, shake together, and pour into an oiled baking pan. Cover with pie crust, and bake to a light brown.

BEAN AND MACARONI PIE

1 cup Lima beans
1 cup broken macaroni
1 tablespoon vegetable butter
1 tablespoon flour
Salt to taste

Cook the macaroni in boiling salted water until well done, saving the water. Cook the beans until tender, with salt to taste. Stir the butter and the flour together over the fire until blended; then add a little of the bean broth, and stir smooth. Add the rest of the bean broth, and enough of the macaroni water to make 2 cups liquid. Add the cooked macaroni and beans, shake together, and pour into an oiled baking pan. Cover with pie crust, and bake the same as bean and potato pie.

BEANS WITH DUMPLINGS

Wash and cook 1½ cups navy or Lima beans, with water to cover, and salt to taste. Drain, and add enough water or potato water to make 2 cups liquid. Mix together in a small saucepan over the fire 2 teaspoons vegetable butter and 2 teaspoons flour, add a little of the broth, and stir smooth. Add the rest of the liquid, and when it is brought to a boil, add dumplings as given for potato stew and dumplings, page 138. Cover, and let boil gently from 15 to 20 minutes; then add the cooked beans, shake together, reheat, and serve.

BAKED MACARONI FAMILY STYLE

1 cup macaroni raw
1 cup tomato pulp
1 tablespoon onion
1 tablespoon vegetable butter
A sprinkle of sage or thyme
1 egg
Salt to taste

Break the macaroni into inch lengths, drop into boiling salted water, and cook until thoroughly done; then wash, and drain in

a colander. Put the butter, the onion, and a little sage or thyme into a saucepan, and stir over the fire for a few moments, but do not brown. Add the tomato, and bring to a boil. Salt to taste. Then pour the hot mixture slowly into the beaten egg, stirring it briskly as it is being poured in. Add the cooked macaroni, pour all into an oiled baking pan, and bake to a light brown.

MACARONI AU GRATIN

Break macaroni into inch lengths, drop into boiling salted water, and let boil until thoroughly done. Then wash in cold water, and drain well. Mix with enough cream sauce to season. Pour into an oiled baking pan, grate fresh bread crumbs over the top, and press down with a spoon so they become well moistened. Sprinkle over with rich cream or small pieces of vegetable butter, and bake to a nice brown.

MACARONI EGG SAUCE

Prepare the macaroni in the same manner as for macaroni *au gratin*. Add a few chopped hard-boiled eggs, working them into the creamed macaroni with a fork, and bake to a light brown.

MACARONI CREOLE

Cook the macaroni the same as for the preceding recipe, drain, and add sufficient creole sauce (page 159) to season well. Put into an oiled baking pan, let simmer in the oven for ½ hour, and serve.

MACARONI IN TOMATO

Use the recipe given for spaghetti in tomato, and substitute macaroni in the place of spaghetti.

MACARONI WITH NEW PEAS

Season well cooked macaroni with a little rich cream, or with canned milk and vegetable butter. Heat in a covered saucepan for 20 minutes, and serve with a spoonful of peas at one side, or mix the peas with the macaroni just before serving.

BAKED MACARONI AND OLIVES

1 cup uncooked macaroni
½ cup chopped ripe olives
2 tablespoons chopped onion
4 tablespoons tomato
2 cups of water in which the macaroni was cooked
2 tablespoons vegetable oil
4 tablespoons flour
Salt and celery salt to taste

Break the macaroni into ½-inch lengths, drop into boiling salted water, and cook until it is well done. Put the oil into a small pan on the stove, and when hot, add the flour, and stir until browned. Then add the onion and the chopped olives, and let them cook a few minutes. Then add the macaroni water and the tomato. Let it boil 5 minutes. Have the macaroni well drained; and while it is hot, put it into the gravy. Turn into a baking dish, grate a few fresh bread crumbs over the top, and with a spoon press them down so they become moistened through. Bake until a nice brown.

NOODLES AU GRATIN

Sprinkle the noodles given on page 264 into boiling salted water, and let boil gently for 15 or 20 minutes. Drain well, mix with a good cream sauce or rich cream, and bake the same as macaroni *au gratin*.

PEAS WITH NOODLES

2 cups green peas
2 cups water (preferably potato water)
2 tablespoons rich cream
Noodles (page 264)
Salt to taste

Put the peas to cook in boiling water, enough to cover. Add salt to taste. Let them cook gently until tender. Put the cream into a small fry pan, and stir over the fire until the oil separates from the albumen. As soon as the albumen turns a light brown, add to the stewed peas, and boil up. Add the potato water, and when boiling hot, sprinkle in the noodles. Let boil 15 or 20 minutes, and serve.

CREAM NOODLES

Cook noodles the same as for noodles *au gratin*. Drain, return to the saucepan, cover, and set on the edge of the stove. Beat one egg with 1 tablespoon melted vegetable butter and ¼ cup milk, or use ¼ cup rich cream, and stir into the hot noodles. Mix over the fire, and let cook only sufficiently to bind them, so they will dish up nicely, and not run on the platter.

SAVORY NOODLES EN POTATO BORDER

2½ cups potato water
2½ tablespoons vegetable butter
1 teaspoon chopped onion
A sprinkle of savory
1 egg or ½ cup very rich sour cream
Mashed potato
Noodles

While the potatoes are boiling, put the fat into a small fry pan, and when it is quite hot, add the egg well beaten. (If cream is used instead of the egg, omit the vegetable fat.) Stir constantly with a fork until a light golden brown color; then remove from the fire immediately, add the chopped onion and the savory, and let stand until the potatoes are ready to be drained. Pour as much of the free fat as will drain from the egg mixture, into a dish; and to the browned egg or cream, add the hot potato water, using additional water if necessary to make the required amount. Add salt to taste, and when brought to a boil, sprinkle in the noodles, and let cook until quite thick. Finish with a little cream or canned milk, and chopped parsley. (The parsley may be omitted.) After dishing the mashed potato on a large platter, press to each side, pour the noodles in the center, and serve.

SAVORY VEGETABLE LOAF

1½ cups soaked stale bread
¾ cup cooked brown beans
1½ tablespoons vegetable butter
1 tablespoon chopped onion
1½ tablespoons brown flour
⅓ cup milk
1 egg
Sage, marjoram, and salt to taste

Soak the bread in cold water, and press out lightly. Put butter, onion, and savory into a small pan, and simmer for a few moments, but do not brown. Add the brown flour, then the milk, and stir smooth. Mash the beans with a spoon, break the egg with a fork, and mix all ingredients. Put into an oiled baking tin, and bake until set and a nice brown.

SAVORY FRIJOLES WITH RICE

1 cup brown beans (raw)
1 cup tomato pulp
¾ tablespoon vegetable butter
2 tablespoons chopped onion
A sprinkle of savory
Salt to taste

Braise the onion and the savory in a small saucepan with the butter for a few moments, add the tomato, and boil up. Have

the beans well cooked in water, with salt to taste; and when the liquid has reduced down low, add the tomato sauce, and let simmer for some time. When ready to serve, have hot boiled rice dished up on a platter; then shove the rice to each side, and pour the savory beans in the center. Sprinkle with chopped parsley, and serve.

LENTIL AND RICE LOAF

2 cups steamed rice
1 cup lentil *purée*
1 tablespoon chopped onion
1 tablespoon vegetable butter
1 tablespoon browned flour
3 tablespoons milk
A sprinkle of sage
⅓ cup chopped walnuts
Salt to taste

Put the butter, the onion, and the savory into a small saucepan, and simmer for a few moments. Add the browned flour, then the milk, and stir over the fire until smooth. Add salt to taste, and mix in the rice with a fork. Mix all the ingredients, pack lightly in an oiled bread tin, and bake until hot through and slightly browned on top.

BAKED RICE ITALIENNE

1 cup rice (raw)
½ cup macaroni, broken up
2 tablespoons chopped onion
1 small clove of garlic
2 tablespoons vegetable butter
2 tablespoons diced sweet pepper
Salt
A sprinkle of thyme
1½ cups tomato pulp
2½ cups water

Put the rice into a frying pan, and brown over the open fire or in a hot oven, stirring often, to a light brown color. Add ½ teaspoon salt and the water, and let cook steadily until dry, having the saucepan covered. Break the macaroni into very small pieces, and cook in boiling salted water until thoroughly done; then wash and drain in a colander. Put sweet pepper, onion, garlic, and thyme into a saucepan with the butter, and stir over the fire for a few moments. Add the tomato, salt to taste, boil up well, and pour over the rice. Mix well; then put a layer of the rice-tomato in an oiled baking pan, and sprinkle the cooked macaroni evenly over it. Put small bits of vegetable butter on it, pour over it the remainder of the rice mixture, bake in a medium oven for half an hour or more, and serve.

WHOLE RICE WITH PEAS

1 cup uncooked natural rice
3 cups hot water
3 cups cooked new peas
2 tablespoons vegetable butter
4 teaspoons flour
⅓ cup milk

Wash the rice thoroughly, drain, add the hot water, and let boil gently until the water is evaporated and the rice looks dry; then cover, and set on the edge of the stove to steam for 15 minutes. Rub the butter and the flour together in a small saucepan, add the milk, and stir over the fire until smooth. Add the cooked rice, and mix with a fork; then add the cooked new peas, mix lightly, put into the oven in a covered dish until hot through, and serve.

SPANISH RICE

½ cup natural rice
1½ cups hot water
1½ cups tomato pulp
2½ tablespoons vegetable butter
3 tablespoons diced onion
2 tablespoons diced sweet bell peppers
1½ tablespoons cream roast flour
A sprinkle of sage
Salt to taste

Brown the rice in a frying pan on the stove, or in a hot oven, until a very *light* brown. Add the hot water, and let boil gently until the water is evaporated and the rice looks dry. Cover, and let steam on the edge of the stove for 10 minutes. Put butter, onion, bell pepper, and savory into a small pan, and simmer for a few moments. Add the flour, then a little of the tomato, and stir smooth. Add the rest of the tomato, and boil 5 minutes. Salt to taste, and pour over the cooked rice. Mix well, and let steam until of a consistency to dish up nicely and not run on the platter.

SPAGHETTI IN TOMATO

⅔ cup raw spaghetti
2 cups tomato pulp
2 tablespoons onion
2 tablespoons vegetable butter
A small clove of garlic if desired
A pinch of thyme
4 tablespoons cream roast flour
Salt to taste

Break the spaghetti into inch lengths, drop into boiling salted water, and let boil until thoroughly done; then wash in cold water, and drain well. Put butter, onion, garlic, and thyme into a small saucepan, and stir over the fire for a few moments. Add the flour, and mix; then add a small quantity of the tomato, and stir

smooth. Stir in the rest of the tomato, and boil up. Salt to taste, add the spaghetti, and let simmer until it is of a consistency to dish up and not run on the platter.

BAKED SPAGHETTI EN CROUSTADE

Take the proportion of cooked spaghetti given in the above recipe, add sufficient cream sauce to moisten nicely, and pour into an oiled baking pan. Chop 2 hard-boiled eggs fine, and mix with 2 teaspoons chopped parsley. Sprinkle over the spaghetti, and press down with a spoon into the cream. Cover with pie crust, mark into squares with a knife, brush over with cream or milk, and bake to a nice brown.

BAKED SPAGHETTI AND CORNLET

¾ cup raw spaghetti
1 cup corn pulp
2 tablespoons chopped sweet bell pepper
1 tablespoon chopped onion
1½ tablespoons vegetable butter
1½ tablespoons flour
¾ cup milk
Salt to taste

Break the spaghetti into inch lengths, cook in boiling salted water until well done, and drain. Grind the corn through a food mill. Put the onion, the diced pepper, and the butter into a small saucepan, and let simmer for a few minutes. Add the flour, and stir. Add a little of the milk, and make smooth. Add the remainder of the milk, bring to a boil, and salt to taste. Put a layer of the spaghetti into an oiled baking pan, then a layer of the ground corn. Pour half of the cream sauce over it, and work it in with a fork. Put in another layer of spaghetti and corn, as before, and the rest of the cream sauce on top. Rub a slice of bread through a colander or strainer over the mixture, and press down with the back of a spoon, to moisten. Put small bits of vegetable butter over the top, and bake to a nice brown.

CORN NUT PIE

1 can corn (ground through a food mill)
1 cup rolled zwieback crumbs
2 cups milk
2 tablespoons vegetable butter
2 teaspoons chopped onion
1½ tablespoons flour
¾ cup diced nuttose or nut cero
2 eggs
Salt to taste
A sprinkle of sage

Heat the milk to about 115°, and pour over the crumbs. Put the onion, the savory, and the butter into a small pan, and simmer for a few minutes. Add the flour, and stir; then add a little of the milk from the crumb mixture, to make a little gravy. Add the diced nut food, and shake together. Beat the eggs slightly, mix all the ingredients, pour into an oiled brick-shaped tin, and bake with a small pan of water underneath, until set and a nice brown color.

SCALLOPED VEGETABLE OYSTERS ITALIENNE

1½ cups macaroni (raw)
4 cups scraped and sliced salsify (oyster plant)

Break the macaroni into ½-inch lengths, cook in boiling salted water until well done, and drain. Wash and scrape the salsify, slice thinly, and cook in boiling water, with salt to taste, until done, and the liquid mostly evaporated. Mix the macaroni and the cooked salsify. Add sufficient rich cream sauce or thick cream to season nicely, and pour into an oiled baking pan. Sprinkle with fresh crumbs, and press them down with a spoon, so they become moistened. Put small bits of vegetable butter over the top, and bake to a nice brown.

CEREAL FILLETS

2 cups milk
2 teaspoons vegetable butter
½ cup corn meal, toasted lightly in the oven
Salt to taste

Heat the milk to the boiling point, and sift in the corn meal gradually, stirring as it is being added, to prevent lumping. Add salt and butter, and let cook gently for about 20 minutes; then pour into an oiled bread tin, and let cool. When cold, cut into squares or triangles, and dip first into flour, then into cream, or milk and egg, and again into fine bread or cracker crumbs. Lay in an oiled baking pan, brush over with cream or milk, and bake to a nice brown, in a quick oven. Serve with maple sirup or jelly.

OLIVE FILLETS

1 dozen chopped ripe olives
2 tablespoons chopped onion
2 teaspoons chopped parsley
Sage or marjoram
⅓ cup milk
2 tablespoons brown flour
Salt to taste
1 tablespoon vegetable butter

Put butter, onion, parsley, and savory into a small saucepan, and simmer for a few moments. Add the brown flour and the chopped olives, and stir; then add the milk, and make smooth. Cut white bread into thin slices, trim off the crust, and spread lightly with vegetable butter. Cover with a spread of the olive filling, and lay another slice of bread over this. Press together and cut into triangles. Lay in an oiled baking pan, pour over it a thin cream-tomato sauce, and let simmer in the oven until hot through, basting now and then with a spoon, and serve.

VEGETABLE LOAF EN ASPIC

Wet an ordinary bread tin with cold water; then garnish the bottom with slices of hard-boiled egg, parsley, and cooked string beans or peas, and fill in with cold baked dressing (pages 133, 134) or nut food cut into large squares, until the pan is nearly full.

Have a good vegetable broth, boiled with a few outer skins of red onions to give color. Take 1½ cups broth, 1 teaspoonful grated onion, salt to taste, and add ½ cup vegetable jelly as prepared on page 201. Mix well, and pour immediately over the food prepared in the dish. Shake slightly, so as to allow the gelatin to get beneath the food; then let stand until cold, invert on a platter, and serve.

NEW ENGLAND DINNER

4 medium sized potatoes
4 small carrots
4 turnips
6 small onions
½ small cabbage
1½ tablespoons vegetable butter
Salt to taste

Quarter the peeled carrots and turnips. Add the onions whole, and put into a saucepan with water to cover. Add the salt, and bring to a boil. Separate the leaves of the cabbage, drop into boiling water, and let boil for 5 minutes. Drain, and add to the vegetables. When the carrots are about half cooked, add the potatoes cut into halves, and the vegetable butter. Salt to taste, and let cook gently until all the vegetables are thoroughly done. To dish up, lay the cooked cabbage first on the center of the platter; then arrange the vegetables around the cabbage, a carrot,

a turnip, an onion, a potato, etc., having them so arranged that the points turn away from the cabbage. Pour over a few spoonfuls of the broth from the cooked vegetables, and serve. A slice of nut food may be served with each order if available.

WALNUT TIMBALES

2 cups stale bread cut in small dice
⅓ cup ground walnuts
1 tablespoon onion
1 cup milk
1 tablespoon vegetable butter
1 egg
¼ cup tomato
Sage and salt to taste

Beat the egg, add the milk, pour over the diced bread, and let soak 20 minutes. Put the onion, the sage, and the butter into a small pan, and simmer for a few moments. Add the tomato, and boil up well. Mix all ingredients thoroughly. Salt to taste. Oil 5 *timbale* molds, divide the mixture among them, set into a pan of water, and bake until set. Serve with tomato or tomato cream sauce.

BAKED CORN TAMALE

¾ cup corn meal (toasted very lightly in the oven)
1½ cups stewed corn
2 cups stewed tomato
10 ripe olives
2 tablespoons vegetable butter
2 tablespoons diced onion
½ cup diced bell pepper
1 cup milk
1 egg
Salt to taste

Heat the milk to the boiling point, add 1 teaspoon salt, and pour gradually over the corn meal, and stir smooth. Add the corn, sliced olives, and the egg slightly beaten, and mix thoroughly. Put butter, onion, and sweet pepper into a saucepan, and let simmer for a few minutes. Add the tomatoes, and bring to a boil. Add a sprinkle of sugar, and salt to taste; then mix all the ingredients, pour into an oiled pan, and bake in a medium slow oven until set and a nice brown.

TAMALE MUSH

1 quart boiling water
¼ cup chopped onion
⅓ cup diced sweet pepper
2 tablespoons vegetable butter
1 large tomato, peeled and cut fine
2 teaspoons salt
1⅓ cups corn meal, or enough to make a medium porridge

Put the butter, the onion, and the sweet pepper into a saucepan, and braise over the fire for a few minutes. Add the water, the

salt, and the tomato, and let boil for 10 minutes. Blend the corn meal with 1 cup of cold water, and add to the boiling liquid, which should measure about 3½ cups. Let boil slowly over the open fire until it thickens; then set into an outer boiler, and let cook for 2 hours. Pour into a wetted mold, and when cold, slice, and brown in an oiled skillet, or use for the following tamale pie.

TAMALE PIE

1½ cups carrots ground through a food mill
1 medium bell pepper cut into dice
2 stalks diced celery
3 tablespoons chopped onion
1 tablespoon chopped parsley
1½ tablespoons vegetable butter
1 tablespoon browned flour
1 cup water
2 cups stewed tomato
⅔ cup diced nuttose or nut cero, or 1 cup crushed gluten biscuit
Salt to taste

Put butter, onion, sweet pepper, celery, and parsley into a saucepan, and simmer slowly over the fire to soften the vegetables. Add the brown flour, and stir; then add the water, the carrots, and a teaspoon salt, and let boil gently until the carrots are about tender. Add the tomato, and let simmer for 10 minutes longer. Salt to taste, and pour into a small well oiled baking pan. Add the nut food (if gluten biscuit is used, it should be boiled with the carrot, etc., first), and cover with slices of tamale mush. Bake in a good oven for half an hour, and serve.

CORN AND TOMATO SOUFFLÉ

1 cup tomato pulp
1 can corn
1 cup fresh bread crumbs
1 tablespoon vegetable butter
1 teaspoon sugar
2 eggs
Salt to taste

Add the butter and the sugar to the tomato, and bring to a boil. Salt to taste, and pour very slowly into the beaten yolks, stirring constantly. Add the corn, and fresh, untoasted crumbs, and mix. Add salt to taste; then beat the whites until stiff and dry, and into them fold the corn-tomato mixture. Pour into an oiled baking pan, and bake in a medium slow oven about 30 minutes, or until set; then remove and serve.

NUT CUTLET, FINE HERBS SAUCE

Lay sliced nuttose or nut cero in an oiled baking pan. Pour over it enough hot fine herbs sauce (page 159) barely to cover, and bake in a good oven for half an hour, with an inverted pan over the top. Remove the top pan, brown lightly, and serve.

STEWED LENTILS

Wash the lentils in several waters, drain, add water to more than cover, and let boil slowly until tender, and the liquid reduced down well. Salt and a little vegetable butter should be added during the cooking, for flavor. An onion may be added, and removed when the lentils are done, if desired.

STEWED LIMA BEANS

Pick the beans over, wash thoroughly, and lift them from the water to remove any small pieces of grit that may be on the bottom of the kettle. Put them on the fire in cold water, bring to a boil, and skim. Add 1 teaspoon vegetable fat to each 2 cups of beans, and let them boil gently until they are thoroughly done. Salt should be added during the cooking, to give them flavor.

BAKED LIMA BEANS

Soak 1 cup of Lima beans overnight; and in the morning, slip off the skins between the thumb and the finger. Put the beans in a small baking pan with ½ teaspoon salt, 2 teaspoons brown flour, 1 teaspoon vegetable butter, and enough cold water to cover them. Put a pan over them, and set them into the oven to cook, adding a little water as needed, so they will not cook dry. When they are about done, remove the pan from the top, and let them brown lightly.

BROWNED BEAN PURÉE

2 cups bean *purée*
3 tablespoons rich cream
1 tablespoon cream roast flour
Salt

Boil beans the same as for stewed Lima beans. Drain in a colander, saving the broth for soups or gravies. Mash through a colander, having them as dry as possible. Mix all ingredients, put into an oiled baking pan, brush over with a little thin cream or vegetable butter, and bake in a quick oven to a light brown color.

RIBBON BEAN LOAF

1 cup Lima bean *purée*
1 cup kidney bean *purée*
3 tablespoons rich cream
2 tablespoons cream roast flour
Salt to taste

Cook the beans separately until well done but not soft. Drain well, and mash through a colander, having the pulp as dry as possible. Add 1 tablespoon of the cooked flour, and 1½ tablespoons of cream, to each, and mix well. Place in alternate layers in a brick-shaped tin, and bake in a moderate oven until hot through and a nice brown. Serve with cream tomato sauce or gravy.

BEAN PATTIES

2 cups bean *purée*
1½ tablespoons vegetable butter
1 tablespoon chopped onion
3 tablespoons flour
1 egg
Scant ⅓ cup hot milk
A sprinkle of sage
Salt to taste

Cook the beans the same as in the preceding recipe, and mash through a colander, having the pulp as dry as possible. In case it is too soft, it may be put into the oven for a few minutes. Make a paste as follows, for holding the food together: Put the butter, the onion, and the savory into a small saucepan, and let simmer for a few moments, but do not brown. Add the flour, and mix; then the milk, and stir smooth. Add the egg, slightly broken up, and stir over the fire until smooth and a very thick paste. Salt to taste, and add the bean *purée*. Mix well, and let cool; then roll out into small, round cakes about ¾ inch thick, mark on the top with a knife, lay in an oiled baking pan, brush over with cream or milk, and brown lightly in a hot oven.

RICE AND EGG CROQUETTES

2 cups steamed natural rice
2 eggs (hard boiled)
1 tablespoon chopped parsley

Mix the chopped parsley and the chopped hard-boiled eggs, and add to the rice. Make a paste the same as for bean patties, and mix in the ingredients. Dip a small timbale or ice cream mold in milk, fill with the croquette mixture, turn out on an oiled baking pan, and brown in a quick oven. Serve with any desired sauce. Chopped, cooked macaroni may be substituted for rice if desired.

BROWN BEANS WITH MINT SAUCE

Cook brown beans with water to cover, salt to taste, and a little vegetable butter. Let simmer until they are well done and the liquid is reduced low. Serve with a spoonful of mint sauce poured over each order, or serve separately, in bowls.

STEWED SOY BEANS

Soak the beans overnight, and cook several hours, until tender. Add salt to taste, and let simmer until the liquid is reduced to rich consistency; then serve.

RICE AND SOY BEAN LOAF

1½ cups soy bean *purée*
1 cup steamed natural rice
2 teaspoons vegetable butter
½ tablespoon cream roast flour
3 tablespoons soy bean broth
Salt to taste

Take the boiled soy beans, drain, and mash through a colander, having the pulp as dry as possible. Rub the flour and the butter together, add the broth, and stir over the fire until smooth. Add this sauce to the cooked rice, and mix with a fork. Add the soy *purée*, and mix well. Salt to taste, pack in an oiled brick-shaped tin, and bake until hot through, and a nice brown.

RICE AND SOY BEAN PATTIES

Take the soy bean and rice mixture described in the preceding recipe, and roll out into small patties about ¾ inch thick. Mark on the top with a knife, brush over with milk or cream, and brown lightly in a hot oven.

STEWED GARBANZOS (Chick Peas)

Wash 1 cupful garbanzos, and soak overnight. Drain, add water, and let simmer until they are thoroughly done and the liquid is reduced to a rich consistency. Add salt while cooking.

BAKED GARBANZOS

Take the above recipe of cooked garbanzos, pour into an oiled baking pan, cover, and bake in a moderate oven until the liquid is reduced and the peas begin to brown on the bottom. Serve with baked apple or apple sauce.

XVI.

GRAVIES AND SAUCES

BROWN GRAVY

2½ tablespoons solid vegetable fat
4 tablespoons flour
1 tablespoon chopped onion
1 small tomato
2 cups vegetable broth or water
Salt to taste

Put the fat into a frying pan, and when hot, add the flour, and stir constantly until a nice brown. Add the chopped onion, and continue to stir for a few minutes; then the tomato, and stir for about 5 minutes, or until the liquid is mostly evaporated, as this will give it a good flavor. Add one third of the liquid, and stir until smooth and free from lumps. Add the rest of the liquid, and let boil slowly for 10 minutes; then strain and serve.

BROWN CREAM GRAVY

Cook down ½ cup sour cream, stirring constantly, until the oil and the albumen separate and the albumen turns a *light brown* color. Then add enough brown flour to take up the oil thus made. Add potato water or vegetable broth, and finish the same as the preceding recipe.

COUNTRY GRAVY

Use the same proportions of flour and fat as in either of the two preceding recipes; omit the onion, and use milk in the place of vegetable broth or water.

EGG GRAVY

3 tablespoons solid vegetable fat
1 egg
Salt to taste
4½ tablespoons flour
2 cups milk or water

Put the fat into a skillet, and when quite hot, add the well beaten egg, and stir over the fire until the whole is a light brown color. Add the flour, and continue to stir until a nice brown; then

add one third of the liquid, and stir until smooth and free from lumps. Add the remainder of the milk, boil up, salt to taste, and serve.

OLIVE SAUCE

Add 8 or 10 chopped ripe olives to the browned flour with the onion in making brown gravy, and use a little tomato juice instead of the whole tomato, boil up well, and serve; or they may be added to the browned flour in country gravy.

CREAM SAUCE

1 cup hot milk
1½ tablespoons vegetable butter
Scant 2 tablespoons flour
Salt to taste

Rub the butter and the flour together in a small saucepan over the fire. Add ⅓ cup hot milk, and stir smooth. Add the rest of the milk, and boil up. Salt to taste, and serve.

NUT SAUCE

Dissolve 2 tablespoons nut butter in a little hot milk, and stir into the foregoing cream sauce.

EGG SAUCE

Add 2 chopped hard-boiled eggs to the above cream sauce, mix, and serve.

HOLLANDAISE SAUCE

1 cup cream
1 tablespoon flour
1 tablespoon vegetable butter
2 egg yolks
2 tablespoons lemon juice
Salt

Put the butter and the flour into a saucepan, and stir over the fire. Add a little of the cream, and stir until smooth. Add the remainder of the cream, and bring to a boil. Beat the yolks with the lemon juice. Add a little of the hot cream, stirring constantly as it is being added. When all is blended, continue to stir over a slow fire until thickened, but do not boil. Salt to taste; and if a richer sauce is desired, more vegetable butter can be beaten into it. Cream sauce may be used in the place of cream, more of the vegetable butter being added the last thing, and beaten in well.

PARSLEY SAUCE

Wash, drain, and chop fresh parsley, put into a cloth, wring out the water, and place on a sauce dish. Add enough parsley thus chopped to the recipe for cream sauce, to give the desired color and flavor (about 3 tablespoons).

TOMATO SAUCE

1 cup tomato pulp
1 tablespoon vegetable butter
Scant 2 tablespoons cream roast flour
½ teaspoon onion
A pinch of thyme
Salt to taste

Put the butter, the onion, and the savory into a small saucepan, and simmer for a few moments. Add the cooked flour, then the tomato, and stir smooth. Boil up, salt to taste, strain, and serve.

TOMATO CREAM SAUCE

Stir ½ cup hot rich cream or cream sauce into the foregoing tomato sauce, strain, and serve.

CREOLE SAUCE

2 cups stewed tomato
½ cup diced onion
½ cup diced sweet bell pepper
1 clove garlic
1½ tablespoons vegetable butter
A sprinkle of sugar
Salt to taste
Chopped parsley

Put butter, pepper, onion, and crushed garlic into a saucepan, cover, and let simmer for a few minutes, stirring often, so as to prevent scorching. Add the tomato, and let boil gently for 10 or 15 minutes. Add salt to taste, a sprinkle of sugar and chopped parsley, and serve.

FINE HERBS SAUCE

2 tablespoons chopped onion
1 tablespoon chopped parsley
1 bay leaf
1½ tablespoons vegetable butter
1 tablespoon flour
2 cups strained tomato
½ cup vegetable broth or water
1 tablespoon lemon juice

Braise onion, bay leaf, butter, and parsley over the fire for a few minutes. Add the flour, and stir; then the broth or water, and stir smooth. Add the tomato, the lemon juice, and salt to taste, and let simmer for 10 minutes. Remove the bay leaf as soon as the sauce is flavored to suit.

BRAZIL NUT SAUCE

5 Brazil nuts ground fine
4 tablespoons flour
1½ cups potato water or milk

Brown the flour in a frying pan on top of the stove. When it is a light golden color, add the nuts, and stir through the flour for 5 minutes. Add half the liquid, and stir smooth. Add the remainder of the water, and let it cook 10 minutes. Salt to taste, strain, and serve.

MINT SAUCE

2 tablespoons chopped green mint
¼ cup boiling water
1 tablespoon sugar
1 tablespoon lemon juice
A pinch of salt

Put the chopped mint into a small cup, add the sugar, and pour on the hot water. Cover, and let stand 20 minutes or more. Then add the lemon juice and the salt.

LEMON SAUCE

1 cup water
½ cup sugar
Juice and rind of 1 lemon
1 tablespoon vegetable butter
1 tablespoon cornstarch
A few grains of salt

Bring the water to a boil. Mix the starch with the sugar, add to the boiling water, and stir smooth. Let boil gently for a few moments. Add the butter, the lemon, and a few grains of salt. Mix well and serve.

CUSTARD SAUCE

1 egg yolk
⅔ cup milk
1 teaspoon sugar
A few drops of vanilla

Heat the milk in a double boiler. When hot, stir a little of it into the beaten yolk and the sugar, and mix well; then pour the yolk mixture into the hot milk, and continue stirring until it lightly coats a silver spoon lifted out of the same. Set in a dish of cold water to cool. Add vanilla flavor.

VANILLA SAUCE

½ cup sugar
1 tablespoon cornstarch
1 cup boiling water
1 slice of lemon
2 tablespoons vegetable butter
1 teaspoon vanilla flavor
A sprinkle of salt

Mix the sugar and the starch thoroughly. Add a little of the hot water, and stir smooth. Add the rest of the water, and the lemon, and let boil for 5 minutes. Remove from the fire, add the butter, salt, and flavor. Mix well and serve.

XVII. VEGETABLES

"Thou shalt eat the herb of the field."
"Mark how spring our tended plants."

VEGETABLES may be divided into two great classes:

1. Coarse or fibrous vegetables, comprising roots, tubers, stems, bulbs, and leaves.

2. The finer or fruity vegetables, as tomato, squash, pumpkin, green peas, corn, immature beans (shelled), cucumbers, melons, etc.

Vegetables are characterized by their large amount of cellulose; and as water enters largely into their composition, they are by no means the most nutritious diet. Food, however, in order to supply perfectly the needs of the vital economy, must contain water, and indigestible as well as nutritive elements. Vegetables are therefore dietetically of great value, as they furnish large quantities of organic fluids, and are rich in those mineral elements which are necessary for maintaining the alkalinity of the blood, and for the repair of the bony structures.

Perhaps no food is more generally used by rich and poor alike in making up their daily bill of fare; yet how often the vegetable is spoiled in cooking! In the first place, the portion of the vegetable next to the skin contains the greater quantity of mineral

matter and flavoring substances. Hence all thin-skinned vegetables, such as carrots, oyster plant, etc., should be scraped. Others should be pared as thinly as possible.

Vegetables, like all starchy foods, should be put to cook in boiling water, as by the application of hot water, the starch grains are caused to swell and burst, and this gives the starch an opportunity to escape through the cellulose.

Whenever possible, vegetables should be cooked the same day they are gathered. If necessary to keep green vegetables for any length of time, do not put them in water, as that will dissolve and destroy some of their juices. Lay them in a cool, dark place. A stone floor is best. Old vegetables should be immersed in cold water for an hour or more just before cooking, to make them more tender.

Young, tender vegetables, as lettuce, tomatoes, water cress, etc., served in the uncooked state, are valuable for the water and the potash salts they contain, also for the stimulating effect they have on the appetite.

NEW PEAS

Shell peas as soon after picking them as possible, drop into cold water, and skim off any dry leaves or imperfect peas that come to the top. Then dip the peas out of the water with the hands, drop them into boiling water enough to cover, add salt, and let them cook gently until they are well done and the liquid is reduced to one third its original quantity. Season with a little vegetable butter or cream if desired.

STRING BEANS

String beans should be picked while young and tender. Break them between the hands to remove any stringy fiber, and remove the ends. Put to cook in boiling water enough to cover, salt to taste, and let boil gently until they are done and the liquid is reduced to a nice consistency for flavoring the vegetable. Add a little vegetable butter or cream, reheat, and serve. String beans that are a little old when picked, should be lifted out of water, put into a vessel with a little hot vegetable oil, and let steam for 15 minutes before hot water is added, and they will be much more tender.

NEW ASPARAGUS

Put the stalks into a deep pan of water, and wash well, that sand and grit may sink to the bottom. Change the water, and lift them out, tie them in bundles of about 3 portions each, having the edible tops even, lay on a board, and trim off the root stems, leaving the stalks about 4 inches in length. Drop into boiling salted water, and cook until tender. Then set the saucepan off the stove until ready to serve. Lift out and drain, lay on a platter, cut and remove the strings, and send to the table. Serve with rich cream sauce or hollandaise sauce.

ASPARAGUS TIPS AND NEW PEAS

Break the tender part of asparagus into ½-inch lengths, and cook in just enough water to cook well. Add salt while cooking. Cook new peas separately. Mix, and add sufficient cream or cream sauce to season. Shake together, reheat, and serve.

STEWED TOMATO

Pour boiling water over ripe tomatoes, and let remain a few seconds. Then drain, remove the skins and the stems, with the hard green parts, and cut into halves. Put into a saucepan with about 1 teaspoon vegetable butter to each 2 cups of tomato, and salt to taste. Boil up well and serve.

BREADED TOMATO

Cut stale bread into ½-inch cubes, and brown in the oven until crisp all through. Drop them into the boiling stewed tomatoes, and serve.

BAKED TOMATO

Select medium sized, solid tomatoes, peel them, and with the point of a knife, cut out a little of the hard part of the stem end. Lay them close together in a baking pan, sprinkle with salt and sugar, and put a speck of vegetable butter in each cavity. Then bake until done but not broken.

SCALLOPED TOMATO

2 cups toasted *croutons*
3 cups stewed tomato
1 tablespoon vegetable butter
A sprinkle of sugar
Salt to taste

Put 1 cup of *croutons* into the bottom of an oiled baking dish, pour over these 3 cups of tomatoes seasoned, sprinkle the remaining cup of *croutons* over the top, press them down with a spoon so they are all submerged, put the butter over the top, and bake to a nice brown.

CORN ON COB

Add milk or a small quantity of lemon juice to the water for corn, bring to a boil, put in the ears of corn, boil up well, then set on the edge of the stove to draw for 20 minutes. Salt, if added, should be put in after the corn is cooked, as it toughens the kernels and turns them a red color.

STEWED NEW CORN

Shave the corn kernels off the sides of the cob with a sharp knife, cutting them through the middle, so as to avoid having too much of the hulls in the product. Go over the cob again and scrape out the pulp with the back of a case knife. Add a little vegetable butter, salt, and a little water, and stew gently for 15 minutes; or season with a little cream or canned milk.

GREEN CORN WITH BELL PEPPERS

Prepare the corn as for stewed corn. Put 1½ tablespoons vegetable butter into a small saucepan, add ⅓ cup finely diced sweet pepper, and let simmer under cover until softened, stirring often to avoid scorching. Add 2 cups of the corn, and mix, stirring now and then, and let steam for 20 minutes or more; then serve.

BAKED CREAM CORN

2 cups corn pulp
⅔ cup light-colored zwieback crumbs
1⅓ cups milk
1 teaspoon salt
2 eggs
A sprinkle of celery salt

Warm the milk to about 120°, pour it over the crumbs, and let them soak. Have the corn ground through a food mill, mix all the ingredients, and pour into an oiled baking pan. Put small bits of vegetable butter, or a little rich cream, over the top, and bake to a light brown.

BAKED EAR CORN

Draw the husks back on full ears of corn. Rub off the silk with a cloth, and wash if necessary. Pull the husk back in place and tie with two cords. Lay in a baking pan, or on the grate in a good oven, and bake from 40 minutes to an hour, according to the degree of heat of the oven. Remove all of the husk except one or two thin leaves, and serve immediately.

STEWED CARROTS, PLAIN

Wash and scrape tender carrots, and slice thinly, or cut in oblong shapes. Add water barely to cover, with salt to taste, and let boil gently under cover. When about half done, add 2 teaspoons of vegetable butter for each pint of carrots, and let cook until well done, and the liquid reduced so there is but enough to flavor the vegetable; then serve.

STEWED CARROTS, ITALIAN STYLE

2 cups sliced young carrots
1½ cups water
¼ teaspoon salt
2 teaspoons vegetable butter
1 teaspoon flour

Add the water and the salt to the sliced carrots, and let boil gently until they are done and the liquid is reduced to ½ cup. Rub the butter and the flour together in a small saucepan, add a little of the broth, and stir smooth. Add the rest of the broth, and boil up. Add the cooked carrots, reheat, and serve.

CARROTS IN CREAM

Add rich cream, cream sauce, or canned milk to either of the above recipes for stewed carrots. Shake together, reheat, and serve.

CARROTS WITH EGG SAUCE

Add 2 or 3 chopped or finely sliced hard-boiled eggs to the above creamed carrots. Reheat and serve.

CARROTS AND GREEN PEAS

Use either recipe for stewed carrots, adding an equal quantity of cooked peas. Reheat and serve.

CARROTS WITH TOMATOES

Cook 2 cups of sliced young carrots in water barely to cover and salt to taste, until they are tender and the water is reduced

down almost dry. Put 1 tablespoon vegetable butter into a small saucepan, add ½ sweet bell pepper cut into small dice, and let simmer until softened. Add 2 cups stewed tomatoes, the stewed carrots, salt to taste, and let simmer together for 15 minutes; then serve.

BREADED CARROTS

Scrub young carrots, and boil in the skins until done. Dip in cold water, one at a time, and remove the skin. Split lengthwise, sprinkle with salt, dip in cream or canned milk, roll in fine cracker crumbs or fresh bread crumbs, and lay in an oiled baking pan. Touch over the top with an oiled brush, and bake for 20 minutes, with a pan over the top; then remove the cover, and brown lightly.

STEWED VEGETABLE OYSTER No. 1

Wash salsify, scrape with a knife, and drop immediately into water to keep it from turning a dark color. Slice, or cut into any desired shape. Put into a saucepan with hot water barely to cover, salt to taste, and let boil gently until it is thoroughly done and the liquid is mostly evaporated. Season with a little vegetable butter or rich cream, and serve.

STEWED VEGETABLE OYSTER No. 2

Prepare and cook the vegetable as for No. 1, and there should be about 1 cup liquid remaining on 2 or 3 cups of the vegetable after boiling. Rub together, in a saucepan over the fire, 1 tablespoon vegetable butter and ½ tablespoon flour. Add a little of the liquid, and stir until smooth and free from lumps. Add the remainder of the liquid, and boil up. Pour this thin sauce over the cooked salsify, reheat, and serve.

SCALLOPED VEGETABLE OYSTER

Prepare the vegetable as in the preceding recipe, slice very thin, and cook tender. Put layers of the oysters in a baking pan, dredging each layer with flour. To each pint of vegetable thus prepared, heat 1 cup of milk to boiling, beat in enough vegetable butter and salt to season, pour over the vegetable, and bake to a nice brown.

STEWED BEETS

Scrub small beets without breaking the skin, and do not trim the roots or the tops too closely. Boil until tender; then drain, cover with cold water, and push off the skins with the hands. Cut each beet into eighths lengthwise, or if very small, into quarters. Put into a saucepan with a small amount of water or stock, vegetable butter and salt to suit, and let simmer under cover for 20 minutes; then serve.

BEETS ITALIAN STYLE

Prepare and cook the beets as for the above recipe. Put 1 tablespoon vegetable butter and ½ tablespoon flour together in a saucepan and stir. Add ¼ cup cold water, and stir until smooth and thick. Add ½ cup vegetable broth or water, and bring to a boil. Add salt to taste, 1 tablespoon lemon juice, and the boiled and cut beets, and let simmer for 20 minutes or more; then serve.

BUTTERED BEETS

Cook the beets the same as directed in the preceding recipe, and slice them *thin*. Put into a saucepan with salt and enough vegetable butter to season. Add a little lemon juice, reheat, and serve.

SCALLOPED BEETS

Add enough rich cream sauce to sliced boiled beets to moisten them, and lay in a baking pan. Grate fresh crumbs over the top, moistening them with a little cream or milk. Put small bits of vegetable butter on top, and brown in the oven.

SPINACH

Pick the greens over carefully, and wash in several waters to remove grit. If the greens are very tender, lift them out of the water, drain well, and put them into a saucepan with a little salt and vegetable butter to season, adding no water. Cover, and cook until done, turning them over in the pan now and then. When greens are more matured, cook them in deep boiling water with the cover off. When done, drain, cut fine, and season with vegetable butter and salt to taste. Reheat, and serve with quartered lemon or hard-boiled egg, or both.

CREAMED SPINACH

Put 1½ tablespoons vegetable butter into a saucepan, and when melted, add ½ tablespoon flour, and stir for a few moments. Add 1 quart of cooked and minced spinach, as given in the preceding recipe, and stir over the fire for 5 minutes; then add 1 cup hot cream or rich milk, cook a few minutes longer, and serve.

BEET GREENS

Young beet tops, or the young plants pulled from the bed where sown too thick, make delicious greens, particularly if the root has attained some little size. Wash thoroughly in many waters, put into a stewpan (roots and leaves), cover generously with boiling water, salt to taste, and let boil quite rapidly for about 30 minutes, or until tender. Drain, saving the water for soups or gravies, and chop rather coarse. Season with vegetable butter and salt, reheat, and serve.

SWISS CHARD

This vegetable is a variety of the beet in which the leaf stalk and the midrib have been developed instead of the root. The green, tender leaves are prepared exactly like spinach. When full-grown, the midribs should be removed, and cooked like celery.

BROWNED PARSNIPS

Wash and scrape parsnips, and cook in salted boiling water until well done. Remove the vessel from the fire, and let stand until cold, preferably overnight. Drain the vegetables, cut in two lengthwise, lay in an oiled baking pan, brush over each piece with an oiled brush, cover with another inverted pan, and bake for 20 minutes or a half hour; then remove the top pan, and brown lightly.

BAKED PARSNIPS

Prepare and cook parsnips as in the preceding recipe, drain, lay the pieces in an oiled baking pan, pour a spoonful of rich cream sauce over each piece, and bake to a light brown.

STEWED PARSNIPS WITH EGG SAUCE

Prepare the parsnips for cooking, the same as in the foregoing recipe. Slice, or cut into small pieces, cover with water, add salt to taste, and boil gently until done. Drain, add enough egg sauce to season well, reheat, and serve.

SUMMER SQUASH

When young and tender, summer squash need only be washed and quartered, put into a steamer or a strainer over a kettle of boiling water, and cooked for about 30 minutes, or until tender. Mash, and season with a little salt, and rich cream or vegetable butter. If very watery, press out part of the juice between two colanders, before mashing.

BAKED STUFFED SQUASH

Choose small, tender squash, wash, and split into halves. Hollow out, make a small cavity in the center, and steam in a colander over boiling water until done. Lay the halves in an oiled baking pan, sprinkle with salt, and spread lightly with vegetable butter. Place a large spoonful of dressing (pages 133, 134) on each piece, having them well rounded, and bake in a hot oven until slightly browned. Serve plain or with gravy.

SCALLOPED SUMMER SQUASH No. 1

2 cups cooked summer squash
1 cup milk
2 cups stale bread
1 tablespoon vegetable butter
1 egg
Salt

Cook the squash in salted water or steam until done, drain well, and mash. Trim off the brown crust from stale white bread, and cut the white part into small dice. Beat the egg, add the milk and a little salt, and pour over the bread, letting it soak 10 minutes. Add the squash and the butter to the soaked bread, mix lightly, and pour into an oiled baking pan. Sprinkle a little cream or butter over the top, and bake until thoroughly done and a nice brown.

SCALLOPED SUMMER SQUASH No. 2

Wash, scrape, and slice summer squash. Steam, or cook in only enough water to make it tender. Drain thoroughly, add enough rich cream sauce to season, and pour into an oiled baking pan. Rub a slice of bread through a colander or strainer over the prepared vegetable, and sprinkle small bits of vegetable butter over the top. Press the crumbs down with the back of a tablespoon so they become moistened, and bake in a good oven to a nice brown.

BAKED SUMMER SQUASH

Cut summer squash into thick slices, drop into boiling salted water, and cook until done. Drain, and lay in an oiled baking pan. Put a spoonful of cream sauce over each piece, and brown quickly in the oven.

VEGETABLE MARROW

This vegetable, like melon, cucumber, and pumpkin, belongs to the gourd family. Prepare and cook in the same manner as summer squash.

WINTER SQUASH

Of the varieties of winter squash, probably one of the best known is the Hubbard. The skin should be so hard that it cannot be punctured with a nail. Break with a hatchet, remove the seeds and the stringy fiber, cut into small blocks, and lay in a baking pan. Sprinkle lightly with salt, brush over each piece with an oiled brush, and bake in a medium oven until tender and a light brown color. Large pieces may be steamed in the shell, and scooped out with a spoon, mashed, and seasoned with a little cream or vegetable butter.

SCALLOPED EGGPLANT No. 1

Use 1 medium large eggplant (2 cups after being cooked). Pare, quarter, and slice ½ inch thick; then drop into boiling salted water, and cook until well done. Drain and mash. Use the same proportions of diced bread, milk, and egg as for scalloped summer squash. Mix and bake the same as for scalloped squash.

SCALLOPED EGGPLANT No. 2

Pare the eggplant, and cut into rather small pieces. Add boiling salted water, and let boil until tender; then drain well. Add sufficient cream sauce to season, and pour into an oiled baking pan. Rub a slice of bread through a colander or strainer, over the cooked food, and press the crumbs down with the back of a spoon so as to moisten them. Put small bits of vegetable butter over the top, and bake to a light brown color.

BAKED EGGPLANT

Pare eggplant, and cut into slices about ¾ inch thick. Drop into boiling salted water, and let cook until nearly done. Drain,

and lay in an oiled pan. Pour a spoonful of cream sauce over the top of each piece, and brown lightly in a quick oven.

BREADED EGGPLANT

Pare, and cut into thick slices. Drop into boiling salted water, and cook until slightly underdone; then drain. Dip each piece first into flour, then into cream, or milk and egg, then into fine bread or cracker crumbs. Lay in a baking pan. Brush over with cream, or milk and a small piece of vegetable butter. Cover, and bake until thoroughly done; then remove the cover, and brown lightly.

(See also Eggplant *Sauté,* page 142.)

GREEN LIMA BEANS

Immature, shelled beans of various kinds are a highly valued article of diet in almost all countries. The cellulose, so woody in the ripened bean, is tender and easily cooked in the fresh shelled bean, and the flavor is excellent. They should be freshly gathered and shelled, stewed until tender, and the liquid reduced low, and seasoned with a little vegetable butter or rich cream.

SUCCOTASH

Add an equal quantity of stewed corn to the cooked shelled beans, shake together, reheat, and serve. Canned beans or well cooked dried beans may be used in the place of fresh beans if desired.

MASHED TURNIPS

Pare young turnips, and cook in a steamer, or in a colander over a kettle of boiling water, until tender. Mash, season with a little rich cream or vegetable butter, and serve.

STEWED TURNIPS

Pare young turnips, and cut into quarters or eighths, lengthwise. Put into a saucepan with water barely enough to cover, and salt to taste. Let boil continuously until done, and the liquid mostly evaporated. Add a little vegetable butter, reheat, and serve.

TURNIPS IN CREAM

Cook turnips the same as for stewed turnips; and when the water is mostly evaporated, add rich cream or cream sauce, shake together, reheat, and serve.

SCALLOPED TURNIP

Use the same proportions of bread, milk, and egg as for scalloped summer squash; and use 2 cups of the foregoing mashed turnip, in the place of the mashed summer squash, and bake the same as scalloped summer squash.

STEWED CELERY

Scrub celery stalks with a brush, and remove, as far as possible, any tough strings or fibers that would be unpalatable. Cut crosswise into slender pieces, add water to cover, salt to taste, and let boil gently until tender, and the water mostly evaporated. Season with a little rich cream or vegetable butter, reheat, and serve.

STEWED CELERY WITH PEAS

Add an equal quantity of cooked fresh shelled peas (or canned peas after draining thoroughly) to the above stewed celery. Reheat and serve.

STUFFED SWEET BELL PEPPERS

Choose 5 medium sized bell peppers. Wash, cut in halves lengthwise, remove the seeds, stem, and cook in boiling salted water for 10 minutes. Drain well, and stuff each half pepper with the "rice and nut pattie" mixture (page 141), or with the Spanish rice mixture, having them well rounded. Place close together in an oiled baking pan, add a little of the liquid drained from the peppers, or a thin brown gravy, cover, and bake in a good oven for half an hour; then remove the top pan, brown lightly, and serve.

KOHL-RABI

This vegetable seems to be a variety of the cabbage; but the nutritive matter, instead of being stored up in the leaves or the flowers, is collected in the stem, which forms a turnip-like enlargement just above the ground. It should be used when it has a diameter of not more than 2 or 3 inches; for when allowed to grow large, it becomes tough and fibrous.

Wash the vegetable, pare, and cut in thin slices. Add to slightly salted boiling water, and boil until tender, having the cover drawn to one side of the stewpan so as to allow the steam to escape. Drain, mash, and season with a little rich cream or vegetable butter.

BOILED ARTICHOKE

Put into salted water for 20 minutes, so as to free from all insects. Cut off the stalks and the ends of the leaves. The hard lower leaves also should be removed. Place in boiling salted water, and boil from half an hour to 2 hours, according to the age and size of the artichokes, or until a leaf comes out readily when pulled. Turn the artichokes upside down for a minute, to drain. Serve plain, or with hollandaise sauce, or cold with mayonnaise dressing.

CAULIFLOWER IN CREAM

Remove all green leaves from cauliflower, and divide into bouquets or pieces about the size of a large hen's egg. Wash, and soak in salted water for 20 minutes. (This will remove any insect that might be hid in the flower.) Drop into boiling salted water, and cook until tender; then set off the stove. Lift the pieces carefully out of the water, drain, and lay on a platter. Pour a spoonful of cream sauce over each piece, and serve.

CAULIFLOWER AU GRATIN

Cook the cauliflower the same as in the preceding recipe. Drain, and lay in an oiled baking pan. Put cream sauce lightly over all. Grate fresh bread crumbs over, and sprinkle with cream or small pieces of vegetable butter. Press the crumbs into the cream with a spoon to moisten them, and brown in a quick oven.

STEWED OKRA AND TOMATO

3 large new tomatoes, or
1 cup canned tomato
2 cups sliced okra pods
2 teaspoons vegetable butter
Salt to taste

Wash the okra, remove the stem ends, and slice quite thick. Add a sprinkle of onion if desired, a little salt, and only sufficient hot water to cook them about tender. Add the butter and the tomato, and let simmer until thoroughly done, but not mashed up.

BOILED ONIONS

Remove the outer skins from small white onions, cover with water, and bring to a boil. Drain, add more boiling water, salt to taste, and let cook gently until done, and the liquid reduced quite low. Add a little vegetable butter, let simmer for 15 or 20 minutes, and serve.

STEWED ONIONS

Prepare and cook the onions as in the preceding recipe, except have a little more liquid on them. Rub together in a saucepan, over the fire, 1 tablespoon vegetable butter and 1 tablespoon flour. Add a little of the onion broth, and stir smooth. Add more of the liquid, and pour over the onions. Let simmer for 10 minutes, and serve.

ONIONS IN CREAM

Add rich cream or cream sauce to either of the above recipes, shake together, reheat, and serve.

BOILED CABBAGE

Trim a small cabbage, cut into halves, remove the stem, and separate the leaves, dropping them into boiling salted water. Let cook gently with cover off, until done; then drain. Put a little cream and vegetable butter into a saucepan, add the cabbage, reheat well, and serve.

STEWED CABBAGE

Shred crisp cabbage, add *boiling* water, bring quickly to the boiling point, then drain. Return to the saucepan, add a little vegetable butter and salt to season, and let cook slowly until tender, having the cover drawn a little to one side while cooking.

CABBAGE IN CREAM

Add a little rich cream or cream sauce to the stewed cabbage, reheat, salt to taste, and serve.

SCALLOPED CABBAGE

Cut the above boiled cabbage crosswise and lengthwise on a board, into 1-inch squares. Add rich cream sauce to season, and put into an oiled baking pan. Rub a slice of bread through a colander or strainer over the cooked cabbage, and press down with a spoon to moisten the crumbs. Place small pieces of vegetable butter over the top, and brown lightly in the oven.

BRUSSELS SPROUTS

Trim very carefully, so as to leave only the hard part of the sprout. Place in boiling salted water, leaving the cover off, and cook until tender. Drain, and season with a little rich cream or vegetable butter.

SMOTHERED CUCUMBERS

Pare medium sized cucumbers, and slice into hot cream sauce. Cover, let simmer until they are tender, and serve.

CUCUMBERS WITH EGG SAUCE

Add sliced or chopped hard-boiled egg to the above smothered cucumbers, shake together, and serve.

MASHED POTATOES

Wash the potatoes, and pare thin, removing all specks with the point of a knife. Add boiling water, and let boil slowly until thoroughly done, and drain; or cook in a steamer. Shake for a few moments over the open flame. Force through a potato ricer, or mash with a potato masher. Add salt, and a little vegetable butter and a little hot milk, or rich cream, and beat until light. Serve immediately.

WARMED MASHED POTATOES

Heat a lightly oiled skillet. Add the cold mashed potatoes, heat gradually on a slow fire, turning with a spatula now and then, and when warmed through and slightly browned, serve at once.

POTATO DUCHESS

4 cups hot mashed potatoes — Salt
1 egg yolk — 1 tablespoon vegetable butter
Thin cream

Boil pared potatoes, drain, mash through a potato ricer, and set on the edge of the stove. Add the butter, the cream, the beaten yolk, salt to taste, and mix well. Put into a pastry bag with a star tube, and press out on an oiled pan in large rose shapes; or lay on a board, and form into diamond or leaf shapes. Brush over with cream or milk, and bake in a quick oven.

POTATO EN SURPRISE

Put the above potato mixture into a pastry bag, and make round potato borders on an oiled baking sheet, leaving a hollow in the center. Fill this cavity with nicely seasoned green peas or spinach. Cover with the potato, brush over with cream, and bake the same as the preceding.

MASHED POTATO CAKES

Use the same ingredients as for duchess potato. Shape into patties, or round cakes, about ¾ of an inch thick. Lay in an oiled baking pan, and brown lightly in a quick oven; or brown in a slightly oiled skillet.

ROASTED POTATOES

Steam or boil pared raw potatoes until they are about half cooked; then drain, and place in an oiled baking pan. Sprinkle with salt, then with flour, brush over each potato with an oiled brush, and bake to a nice brown.

BAKED POTATOES

Wash and scrub medium sized potatoes until nearly white. Lay on the grate or in a baking pan in a medium oven, and bake until they feel soft when pressed between thumb and fingers. If baked potatoes must be kept for a time after baking, puncture with a fork, to let the steam escape, and wrap in a cloth, or cover with another pan and leave in the open oven until needed. Otherwise they tend to get soggy.

STUFFED BAKED POTATOES

Prepare and bake the potatoes the same as above. Cut off a slice from one side, lengthwise, and scoop out the potato. Mash through a ricer, and season with rich cream, or with milk and vegetable butter. Salt, and beat until light and very white. Fill the skins rounding full, but do not smooth down on the top. Brush with cream or milk, and brown lightly in a good oven. Serve immediately.

SCALLOPED POTATOES

Slice pared raw potatoes thin. Put a layer of the sliced potatoes into an oiled baking pan, and sprinkle with salt and flour. Repeat the process until the pan is about three fourths full. Pour over the potatoes enough milk to cover them. Put small bits of vegetable butter on top, and bake until thoroughly done.

SAVORY POTATOES

Add finely chopped onion and parsley to each layer of the foregoing scalloped potatoes, and bake the same as the above

recipe. Water may be used in place of the milk, if desired, a little more of the butter being required than when milk is used.

POTATO AU GRATIN

Chop or dice cold boiled potatoes. Add enough rich cream sauce to season nicely. Pour into an oiled baking pan, rub a slice of bread through a colander or strainer over the top, and press the crumbs down with a spoon, so they become moistened. Sprinkle with small bits of vegetable butter, and bake to a light brown color.

CREAMED POTATOES

Put 2 cups milk into an oiled baking pan, and heat over the stove until it reaches the boiling point. Add 1 tablespoon vegetable butter or ¼ cup rich cream, and enough sliced or hashed cold boiled potatoes so that they are barely covered with the milk. Continue to simmer over the fire until they begin to thicken; then set in the oven for a few minutes, and serve.

Note.— If the milk is heated to the boiling point before the boiled potatoes are added, they will have a sweet taste, and will not be sticky, as they will if put into cold milk and heated.

ROASTED SWEET POTATOES

Steam or boil sweet potatoes until the skins can be scraped off easily. Lay in an oiled baking pan and sprinkle with salt. Then brush over each potato with vegetable oil, and bake until done and a nice brown.

MASHED SWEET POTATOES

Wash and pare sweet potatoes, steam or boil until tender, drain, mash, and finish the same as mashed potatoes.

GLAZED SWEET POTATOES

Boil sweet potatoes until done, peel, and cut into quarters lengthwise. Lay them close together in an oiled baking pan, dust with salt to season, and sprinkle sugar lightly over all. Brush over with vegetable oil, and brown nicely.

XVIII.

SALADS AND DRESSINGS

"Preserving the health by too strict a regimen is a wearisome malady."

SALADS, composed chiefly of green, tender vegetables, or of fruits and nuts, and served with a dressing, are valuable as a means of supplying fat. They are also valuable for their mineral salts. When carefully prepared and daintily served, salads are among the most appetizing adjuncts of a meal, and owe much of their food value to this very attractiveness.

Nearly all vegetables may be served in the form of salads. The salads made with raw vegetables are more refreshing than those made with cooked vegetables. They abound in the essential vitamine and organic salts so necessary to perfect nutrition, and give a pleasant variety to the menu.

Plain salads that require oil and lemon juice for dressing should not be prepared until the moment they are wanted. Should they be mixed long before they are served, the lettuce would be found flabby, and the dressing watery and insipid.

Garnishing or decorating salads is important, inasmuch as the most deliciously blended salad will not be appreciated unless it is attractive in appearance. Wild flowers neatly arranged with alternate tufts of green are pretty during summer. In cold weather, garnish with designs cut from beets, turnips, radishes, carrots, etc.

DRESSINGS

MAYONNAISE

2 yolks of eggs
⅛ teaspoon salt
1½ cups best vegetable oil
About 4 tablespoons lemon juice

(USE LEVEL MEASUREMENTS FOR ALL INGREDIENTS.)

Put the egg yolks in a small bowl, add the salt and a half teaspoon lemon juice, and mix well. Add the oil gradually, drop by drop at first, but faster as you proceed, and stir constantly. As the mixture thickens, thin it with lemon juice. Add oil and lemon juice alternately until all is used, stirring or beating constantly. Keep well covered and in a cool place when not in use.

Mayonnaise may be made more economically and in less time by using the whole egg, as the white of egg takes up the oil more readily than does the yolk used by itself, and it also takes up more oil proportionately than the yolk. However, the color and the flavor will not be quite so rich as when the yolks only are used; but this lack of color can be overcome by the use of a little vegetable butter coloring, and the difference is not noticed by many.

ECONOMICAL MAYONNAISE No. 1

1 whole egg
Scant ½ teaspoon salt
About 3 cups best vegetable oil
3 tablespoons lemon juice

Beat the egg with a Dover beater. Add the oil slowly at first; then increase as the egg takes up the oil, until all is used, adding lemon juice when it gets too thick, to make the dressing of the desired consistency. Add a few drops of vegetable butter color, and set in a cool place.

ECONOMICAL MAYONNAISE No. 2

1 egg
1 cup water
2 tablespoons cornstarch
1½ cups best vegetable oil
¼ teaspoon salt
About 3 tablespoons lemon juice

Bring the water to a boil, and thicken with the cornstarch made smooth in 3 tablespoons cold water. Boil up well, and set aside until partly cool. (It should be used before it gets cold, or it will be lumpy.) Beat the egg and the salt with a Dover egg beater. Add the oil, the lemon juice, and the cooked starch by turn, slowly at first, and increase as the egg takes up the oil and the starch, until all is used. Add salt to taste, and butter color to make the color of ordinary mayonnaise, and set in a cool place.

Note.— Mayonnaise made with cooked starch will not keep sweet more than two days, and should be made for immediate use only.

MAYONNAISE WITHOUT EGG

Put ⅓ cup canned milk into a small round bowl. Add the oil very slowly at first, stirring constantly, and increase as the milk takes up the oil. Thin with lemon juice, add salt to taste and a few drops of butter color, and use the same as ordinary mayonnaise.

CREAM MAYONNAISE

Add rich cream, slightly whipped, to thick mayonnaise dressing, in the proportion of about ⅓ cream to ⅔ mayonnaise, beating the dressing the same as when adding the oil. Canned milk may be used in the place of cream, in smaller proportion. Stop when the mayonnaise is thinned sufficiently.

BOILED DRESSING

⅓ cup cream
½ teaspoon cornstarch
2 tablespoons lemon juice
2 teaspoons vegetable butter
1 egg yolk
Salt to taste

Heat the cream in a double boiler. Rub the starch smooth with a little cold milk, and stir into the hot cream. Cover, and let cook for 10 minutes. Beat the yolk, add the butter and the lemon juice, and mix well. Pour the hot cream gradually into the yolk mixture, stirring as it is being poured in. Then return to the fire, and continue stirring until of the right thickness. Salt to taste, and let cool.

FRENCH DRESSING

1½ tablespoons olive or cottonseed oil
Scant tablespoon lemon juice
½ teaspoon grated onion
A few grains of salt

Dissolve the salt in the oil with a spoon. Add the ingredients in the order given, and beat with a spoon to emulsify the liquids. Use immediately.

CREAM DRESSING

½ cup thick cream
3 tablespoons lemon juice
1 tablespoon sugar
Salt

Whip the cream until quite thick but not stiff. Then add sugar, salt, and lemon juice, and serve.

QUEEN FRUIT SAUCE

⅓ cup light-colored fruit juice (pineapple or orange)
2 tablespoons lemon juice
3 tablespoons sugar
1 teaspoon cornstarch
1 egg yolk
A few grains of salt

Put the juices into a small saucepan and bring to a boil. Mix the starch with the sugar, and add enough of the fruit juices to mix smooth. Beat the yolk slightly, and add to the sugar and starch mixture. Then pour in gradually the hot liquid, stirring meanwhile. Continue to stir on the edge of the stove until it thickens slightly, but do not boil. Add the salt, and let cool.

Note.— Slightly whipped cream, in the proportion of ⅓ cream to ⅔ sauce, added to this sauce when cold, is excellent.

VEGETABLE SALADS

LETTUCE AND TOMATO SALAD

Arrange lettuce leaves on a plate. Have a ripe tomato peeled and cooled. Lay on lettuce leaves. Run a sharp knife across the middle of the tomato, cutting it nearly in two, then crosswise, so that the four quarters fall back, yet hold together underneath. Drop a teaspoon of mayonnaise into the center of the tomato, and serve.

COMBINATION SALAD No. 1

Lay crisp lettuce on a platter. Arrange over it peeled and quartered tomatoes, sliced cucumbers, a few sprigs of parsley, and serve with mayonnaise. Sliced green onion may be added if desired.

COMBINATION SALAD No. 2

Sliced tomato
Sliced cucumber
Sliced green onion
Sliced radishes
Lettuce
French dressing

Pare the vegetables, slice very thin, and put into a bowl. Tear the lettuce into large pieces, add to the vegetables, and set on ice if available. Just before serving, pour over enough French dressing to season, using it scantily.

POINSETTIA TOMATO

Select a small ripe tomato, wash, and wipe with a cloth. With a sharp-pointed knife, cut through the skin, from the stem end, across the tomato, dividing the skin into about 8 parts, so as to resemble poinsettia leaves. Run the blade of a penknife under each leaf, and pull it back on the plate, until all the leaves lie on the plate, and attached to the tomato stem. Cut the tomato crosswise the same as for lettuce and tomato salad, and serve with mayonnaise.

TOMATO SALAD FRANCAIS

Pour boiling water over medium small ripe tomatoes, and drain immediately, covering with cold water. Remove the skins from the tomatoes, hollow out carefully, and fill until well rounded with a mixture of chopped celery, finely diced cucumber, and tomato, seasoned with mayonnaise and chopped parsley. Serve on a lettuce leaf.

STUFFED TOMATO

Prepare the same as above, and use as a filling, chopped celery, finely chopped walnuts, and the solid part of ripe tomato chopped, seasoned with mayonnaise and chopped parsley.

TOMATO MEXICANA

Mix finely chopped bell pepper, olives, parsley, and a sprinkle of onion, in a bowl, and spread this over thick slices of raw tomato. Serve with mayonnaise, on a lettuce leaf.

TOMATO EN SURPRISE

Scald and peel a tomato. Cut off a liberal slice from the blossom end, which must be kept for covering. Hollow out the center of the tomato, and turn upside down in a dish to drain. Cut cooked asparagus tips into ½-inch lengths, season with mayonnaise, and refill the cavity in the tomato. Cover with the slice of tomato, and serve on a lettuce leaf.

CUCUMBER SALAD AU NATURAL

Select well shaped, green-colored cucumbers. Wash, and wipe dry. From the blossom end, cut under the skin with a sharp knife, almost to the opposite end, but leaving fast at the stem end, thus making four green leaves of the skin, the length of the cu-

cumber, one on each side, with a space between. Cut near the stem end with the point of a sharp knife, so that the white part may be removed without breaking the leaves formed. Finish peeling the part removed, and slice thin. Keep the slices together in natural shape, so that the whole may be fitted again between the green leaves, or skin, of the cucumber. Lay on a white platter, in the natural skin thus cut representing long leaves. Serve separately with mayonnaise or French dressing.

SLICED CUCUMBERS

Have the cucumbers as cold and crisp as possible. Pare, and slice thin. Just before serving, add a little French dressing and chopped parsley. Or they may be seasoned with lemon juice, salt, and a sprinkle of sugar.

GOLDEN STATE SALAD

1 cup young carrots, 1 cup young turnips, 1 cup radishes, measured after being ground through a food chopper. Add 1 cup finely shaved celery, and season with chopped green onion to suit, ½ cup finely diced pimento (if at hand), and a liberal quantity of chopped parsley. Mix with plenty of mayonnaise, and serve on a lettuce leaf.

CELERY AND CARROT

2 cups young carrot (measured after being ground through a food chopper)
1 cup shredded celery
1 diced green onion
Chopped parsley

Mix, and season with plenty of mayonnaise.

CABBAGE AND CARROT SALAD

1 cup raw carrot ground through a food mill
2 cups finely shredded cabbage
2 sliced green onions
¼ cup chopped parsley

Mix, and season with plenty of mayonnaise. Serve on a lettuce leaf.

COLD SLAW

Shred crisp, young cabbage very fine, and season with chopped onion and parsley. Add mayonnaise, or French dressing, or cream dressing, and serve on a lettuce leaf.

CARROT AND BELL PEPPER SALAD

Grind through a mill 1 sweet bell pepper (seeds removed), and sufficient young carrots to make 1½ cups all together. Add twice the quantity of chopped crisp cabbage, with chopped parsley and onion to suit. Blend with plenty of mayonnaise or cream mayonnaise, and serve on a lettuce leaf.

BEAN AND CABBAGE SALAD

1 cup boiled or baked beans (not broken much)
1 cup finely diced cabbage
1 teaspoon chopped onion
Chopped parsley

Mix, and season with boiled dressing or cream mayonnaise. Serve on a lettuce leaf.

POTATO SALAD

Cold boiled potato
Chopped or grated onion
Hard-boiled egg
Chopped parsley
Boiled dressing

Peel the potatoes, quarter lengthwise, and slice very thin. Add chopped onion and parsley, sprinkle with salt, and season with boiled dressing. To dish up, pile on a platter or a plate in oblong shape, having the salad piled high and narrow, leaving the sides of the plate vacant for garnitures. Garnish with lettuce, and hard-boiled egg cut into quarters, at each side, and sliced boiled beet cut into fancy shapes, at each end and on top.

BEET AND POTATO SALAD

2 cups diced cold boiled potato
1 cup diced boiled beet
2 chopped hard-boiled eggs
2 teaspoons chopped onion
Chopped parsley

Mix, and blend with boiled dressing or cream mayonnaise. Serve on a lettuce leaf.

ITALIAN SALAD

1 cup cooked macaroni cut in small rings
½ cup diced celery
⅔ cup finely diced carrot
½ cup cooked green peas
2 teaspoons grated onion
Mayonnaise or boiled dressing

Mix all ingredients, season with dressing, and serve on a lettuce leaf.

NUT AND CELERY SALAD

1 cup diced nut loaf or nuttose
1 cup diced celery

Put the diced nut food into an oiled pie tin, and brown lightly in the oven, stirring often to prevent scorching. Add to the diced celery, and season with boiled dressing, chopped parsley, and a little chopped or grated onion. Serve on a lettuce leaf.

MACARONI AND OLIVE SALAD

1 cup cooked macaroni cut in small rings
1 cup shredded celery
½ cup shredded ripe olives
1 teaspoon chopped onion
Chopped parsley

Mix all the ingredients, and blend with boiled dressing, or mayonnaise. Serve on a lettuce leaf.

MR. HOLMDEN'S MACARONI SALAD

To mayonnaise, add sufficient *red* tomato pulp (stirring constantly as it is being added) to give it a pink color. Blend this with cooked macaroni, cut in small rings. Add diced or grated onion and chopped parsley to suit the taste, and serve on a lettuce leaf.

CARROT SALAD, À L'ANGLAISE (English)

2 cups young carrot ground through a food chopper
1 cup chopped celery
⅔ cup chopped walnuts
2 teaspoons chopped onion
Chopped parsley

Mix, and blend with plenty of mayonnaise. Serve on a lettuce leaf.

MACEDOINE SALAD

1 cup diced boiled potato
½ cup diced boiled carrot
¼ cup diced boiled turnip
⅓ cup green peas
1 tablespoon chopped onion
Parsley

Mix all the ingredients, and season with boiled dressing or with mayonnaise. Serve on a lettuce leaf.

EGG SALAD

Dice hard-boiled eggs, season with boiled dressing, serve on a bed of lettuce, and sprinkle with chopped parsley.

BEET AND EGG

⅔ cup diced boiled beet
1 hard-boiled egg diced
1 teaspoon chopped onion

Mix all ingredients, and season with mayonnaise or boiled dressing.

WATER LILY SALAD

Cut a hard-boiled egg through lengthwise. Mash half of the yolk through a strainer. Put the other half yolk into a dish, and mash with a fork, adding enough boiled dressing to season well. Cut each half of the cooked white into three pieces lengthwise, to represent petals. Arrange on a plate of lettuce. Place a spoonful of the yolk mixture in the center, sprinkle the crumbed yolk over the salad, and serve.

STRING BEAN AND PIMENTO SALAD

2 cups cooked string beans
1 cup shredded celery
2 teaspoons chopped onion
3 pieces canned pimento cut into small dice
Chopped parsley

Mix the ingredients, and blend with mayonnaise or cream mayonnaise.

TOMATO SALAD (Agar)

2½ cups tomato pulp
1 tablespoon chopped onion
1 bay leaf
1 sprig of parsley
1 tablespoon lemon juice
2 teaspoons sugar
Salt to taste
Vegetable jelly

Prepare and cook the agar as given on page 201, and have it kept hot until wanted. Add onion, bay leaf, parsley, lemon juice, and sugar, to the tomato, and let boil gently for 15 minutes. Salt to taste, and strain. To the 2 cups of tomato juice thus prepared, add ¾ cup of vegetable jelly, mix well, pour into small molds, and let cool. When set, turn out on a lettuce leaf, and serve with a teaspoon of mayonnaise on top.

CUCUMBER SALAD (Agar)

1½ cups cucumber juice
3 tablespoons lemon juice
¼ cup water
1 tablespoon sugar
1 tablespoon grated onion, or a little onion salt
Chopped parsley
Salt to taste

Pare and grate the cucumbers, and press out the juice through a cheesecloth or a strainer. Mix all the ingredients, adding just enough chopped parsley for garniture and flavor; then add ¾ cup of vegetable jelly, and mix well. Pour into small molds, let set till cool, and serve with mayonnaise.

SWEET POTATO SALAD

1 cup diced boiled sweet potatoes
2 stalks crisp celery cut into dice
2 teaspoons each of chopped onion and sweet bell pepper
Chopped parsley

Mix all the ingredients, and season with French dressing or cream mayonnaise.

SLICED BEETS IN LEMON

1 cup water
½ cup lemon juice
2 tablespoons sugar
1 teaspoon salt
1 bay leaf
Boiled beets

Add salt, sugar, and lemon juice to the water, and bring to a boil. Slice the cooked beets into the hot liquid, add the bay leaf, cover with a plate so as to keep the beets submerged in the liquid, and let cool. A hard-boiled egg may be put whole into the bowl with the sliced beets, and served with a sprig of green leaves stuck into one end for garniture, if desired.

FRUIT SALADS

FRUIT SALAD

Cut equal quantities of orange, pineapple, banana, and mellow apple into small dice. Season with fruit sauce or cream mayonnaise, and serve on a lettuce leaf. A few ripe strawberries when in season are a good addition.

FRUIT BASKET

Select medium sized, well colored oranges. Hold an orange between the thumb and the first finger, letting the side of the orange rest on the table. With a small, pointed knife, start in the middle of the orange, and run the blade about 2 inches into the center, then again and again, all the way around, in such a manner that the orange will part in two halves, leaving the edge ruffled with small points of peel, like the teeth of a coarse saw. Run the point of a knife around each half, near the peel; then with a teaspoon, dip out the fruit in one piece. Cut the orange center into small cubes, to which add equal quantities of diced banana and pineapple, and a few ripe strawberries if available. Add fruit

sauce to season, and fill the orange shells, having them well rounded with fruit. Serve on a white plate, with three small orange leaves or a lettuce leaf for garniture.

FRUITS AND NUTS

1 cup diced oranges
1 cup diced bananas
1 cup diced pineapple
Chopped walnuts

Mix the fruits, and season with fruit sauce. Dish up on a lettuce leaf, and sprinkle chopped walnuts over the top.

WALDORF SALAD

1 cup diced sweet apple
1 cup finely diced celery
A little chopped parsley
½ cup chopped walnuts
Cream mayonnaise

Dice the apples first, and mix with mayonnaise, so as to keep them from turning a dark color. Mix all the ingredients except the walnuts, which must be added just before serving, to prevent the salad from turning dark. Serve on a lettuce leaf.

APPLE AND BANANA SALAD

2 cups diced sweet apple
1 large banana cut through lengthwise and sliced
6 dates finely shredded
Fruit sauce or cream mayonnaise

Mix the ingredients, and serve on a lettuce leaf.

PRINCESS SALAD

1 cup seeded cherries
1 cup pineapple cut in large dice
1 cup marshmallows cut into dice
1 cup shredded walnuts
Fruit sauce or cream mayonnaise

Mix all the ingredients except the walnuts, which should be added just before serving. Serve on lettuce leaves.

PRUNE AND PECAN NUT SALAD

Soak large sized dried prunes for twenty-four hours in cold water, drain, and dry off the moisture. Remove the pits, and cut the prunes into quarters or eighths. Add an equal amount of coarsely chopped pecan nuts, blend with a little cream mayonnaise, and serve on a lettuce leaf.

APPLE AND PIMENTO SALAD

1 cup finely sliced sweet apple
½ cup hearts of celery, chopped fine
2 pieces pimento diced fine
Cream mayonnaise

Mix all the ingredients, and serve on a lettuce leaf.

CROWN PRINCE SALAD

Line a small plate with crisp lettuce. Take slices of orange, and dispose around the side of the dish. Fill in with sliced banana, pineapple cut into large pieces, orange cut likewise, and ripe strawberries. Pile the fruit high, and pipe whipped cream on top and sides with a pastry bag, to represent a crown.

RIBBON APPLE SALAD

Select small, fine-grained red apples. Core and pare, leaving the skin in the shape of a ring near the stem end of the apple. Remove some of the inner portion of the apple, being careful not to break the shell. Fill the cavity with equal quantities of finely diced celery and apple, seasoned with cream mayonnaise. Put a small funnel of crisp lettuce in the top of the apple, into which drop a teaspoonful of dressing. Serve on apple leaves or a lettuce leaf.

STUFFED DATE SALAD

Remove the pits from washed dates, fill each date with half a walnut meat, and press together. Put into a salad bowl, and wet with lemon juice. Serve on a lettuce leaf.

RAISIN SALAD

½ cup seeded raisins, sliced
1 cup finely diced apple

Prepare the raisins first, then the apples. Mix, and season with cream mayonnaise. Serve on a lettuce leaf.

XIX. DESSERTS

THE most wholesome desserts are fruits in their natural state, and nuts. Fruits may be served raw or cooked, fresh or dried, and should form a part of every day's dietary.

Because of their attractive colors, sweet aroma, and delicious flavors, fruits are the very best appetizers, appealing to the senses of sight, smell, and taste. They satisfy a natural craving for something dainty at meals, without burdening the system with extra work, and with little danger of excess. As it is written, "Of every tree of the garden thou mayest *freely eat.*" Genesis 2:16. No danger of "auto-intoxication" here; but, on the other hand, fruit acids are cleansing, and their alkaline substances are valuable for improving the condition of the blood.

Cane sugar is quite different from fruit sugar, in that it needs to be digested, or converted into fruit sugar, in order to be utilized by the body. Saliva does not exert any influence upon cane sugar, neither does the gastric juice. The intestinal juice aids in converting it into fruit sugar; but there is more or less danger of fermentation's being set up, and the irritant thus formed aids in bringing about catarrhal conditions. If one subsists largely upon fruits, the desire for artificial and highly sweetened foods will disappear. No other foods are so well suited to children as are fruits. All children have a craving for sweets. This is natural, at least to some degree; and they should be supplied with sweets designed by nature to satisfy this desire.

As a rule, far too much sugar is used in food. "Sweet breads, sweet cakes, . . . perpetuate indigestion and make dyspeptics." We should exercise care, however, to provide suitable dishes to take the place of the more harmful ones, ever remembering that "diet reform must be progressive." The free use of milk and sugar taken together is especially harmful, and should be avoided. Their place should be supplied, as far as possible, by preparations of fruit, and a variety of grains served in an appetizing manner. A simple cake may be made without the large quantities of butter, sugar, milk, and eggs ordinarily used, which are difficult of digestion. A few examples of such cake will follow.

DRIED FRUITS

In many localities, during the winter months, it is difficult to obtain fresh fruits; but good varieties of dried fruit can be purchased in the markets at any season of the year.

The high temperature to which dried fruit is usually subjected in cooking, produces a strong flavor, which few persons relish. In the process of drying, the water is evaporated from the fruit; and if this moisture can be restored to the fruit before cooking, the original flavor is retained, and to a large extent, it will have the appearance of fresh fruit. Instead of dried fruit's being cooked several hours, as is customary in many homes, it needs to be cooked no longer than fresh fruit of the same variety, after the water is restored to it.

SOAKED DRIED PRUNES

Select a good grade of large prunes, wash thoroughly, and soak in cold water for 24 to 36 hours, or until as soft as fresh prunes. Serve the same as stewed prunes.

STEWED DRIED PRUNES

Wash thoroughly several times in warm water; then cover with water, and let soak from 12 to 24 hours, or until sufficient water has been absorbed to make them soft as fresh, ripe fruit. Simmer slowly until thoroughly done, and little or no sugar will be required.

STEWED DRIED APRICOTS

Ripe apricots are never sour unless brought to a high temperature in cooking. Wash the fruit thoroughly in warm water, and let soak for 24 hours or more, or until the fruit is as soft as fresh fruit. If properly soaked, apricots will require very little cooking. Heat gradually over a slow fire, using the water in which they were soaked, but do not let them come quite to the boiling point. Let them simmer on the edge of the stove until they are thoroughly scalded, and they will be fairly sweet without sugar.

STEWED DRIED PEACHES

Wash thoroughly, cover with warm water, and soak overnight. If the fruit was ripe when dried, the skins will slip off easily. If there are a few pieces that were not ripe, and that are not loosened, use a knife for these. After removing the skins, add fresh water, and soak several hours, when the peaches will be soft, like fresh peaches. Do not boil, but simmer slowly until done. Sweeten to taste.

PUDDINGS AND JELLIES

STEAMED FRUIT PUDDING

1½ cups soaked stale bread
1 cup seedless sultana raisins
The grated rind of ½ lemon
3 tablespoons sugar
1 egg
1 tablespoon vegetable butter

Soak the raisins overnight, drain, and put on a slow fire until hot through; then add the vegetable butter. Have the bread soaked in cold water until soft all the way through, and press out lightly. Beat the egg, and mix all the ingredients, using a silver fork. Put into a thin cloth, leaving a little room to rise, and steam for 1½ to 2 hours. Turn out on an oiled pie tin, bake for a few minutes, and serve with lemon sauce. This last baking may be omitted if not convenient. If seeded raisins are used, they should be added without soaking.

GRAHAM FRUIT PUDDING

5½ cups water
⅔ cup sugar
1¼ cups seeded raisins
1 cup Graham flour (toasted lightly in the oven)
2 slices lemon
A few grains of salt

Put the Graham flour into a medium slow oven and toast lightly, but avoid browning in the least. Add 1 cup of the water to the toasted flour and stir smooth. Add sugar, lemon, raisins, and a few grains of salt to the water, bring to a boil, and let boil gently until the liquid measures 4 cups; then pour the hot mixture gradually on the wetted Graham flour, and stir smooth. Let boil gently for a few minutes, or until quite thick. Pour into wetted molds and let cool. Turn out on a sauce dish, and serve with cream or vanilla sauce.

FRUIT TAPIOCA

⅓ cup minute tapioca
2 cups boiling water
½ cup cold water
½ cup sugar
A slice of lemon

Soak the tapioca in the cold water for 10 minutes. Add boiling water, sugar, and lemon, and let boil until transparent; then pour over cooked and sweetened fruit, such as pared, quartered, and baked apples, stewed and drained peaches, cooked strawberries, etc. Set into the oven to simmer for 20 minutes or more, cool, and serve with cream.

CREAM TAPIOCA PUDDING

¼ cup minute tapioca
2½ cups hot milk
½ cup cold milk
2 eggs
⅓ cup sugar
Vanilla flavor
A sprinkle of salt

Soak the tapioca in the cold milk for 10 minutes, add the hot milk, and cook in a double boiler until transparent. Beat the egg yolks, the sugar, and a sprinkle of salt together. Add the hot mixture gradually, stirring with a spoon as it is being added. Let continue to cook until it begins to thicken; then remove from the fire. Beat the whites stiff, flavor with a teaspoon vanilla, and fold in the hot mixture, chill, and serve.

APPLE SNOW

Cook 6 tart apples, pared and sliced, with ¾ cup water and ⅔ cup sugar, until tender. Mash through a fine strainer, and let cool. Put 1½ cups of the apple pulp into a bowl with the

white of 1 egg, and beat with a whisk or Dover beater until white and fluffy. Serve plain, or with a teaspoon red jelly on the top of each dish.

STRAWBERRY WHIP

1 cup strawberries
White of 1 egg
½ cup sugar
1 teaspoon lemon juice

Choose well ripened strawberries, wash them, and remove the stems. Put all the ingredients into a bowl, and beat with a wire egg whip until light and fluffy, which will take 20 minutes or more. Pile lightly on a dish, and pour around it a border of crushed fruit or red fruit juice, unsweetened.

SCALLOPED APPLES

1½ quarts thinly sliced tart apples
3 cups fresh bread crumbs
½ cup sugar
Juice and rind of 1 lemon
Vegetable butter

Remove the crust from ordinary stale bread, and rub the soft part through a colander or a coarse strainer. Cover the bottom of an oiled baking pan with a layer of the crumbs, and over this spread half of the sliced apples. Sprinkle with half of the sugar mixed with the lemon rind. Pour over it the lemon juice, and small bits of vegetable butter; then add another layer of crumbs, and apples, as before. Sprinkle a thin layer of crumbs over the top, and bake under an inverted pan until about done; then remove the top pan and brown lightly.

LEMON SNOW

¾ cup water
3 tablespoons lemon juice
Rind of ½ lemon
½ cup sugar
2½ tablespoons cornstarch
Salt
White of 1 egg

Mix the sugar and the starch thoroughly. Put the water, the lemon rind, and the lemon juice into a small saucepan, and bring gradually to a boil. Add a pinch of salt to the white, and beat until stiff and dry. Strain the hot liquid, and pour it slowly into the sugar and starch, and mix smooth. Return to the fire and bring to a boil; then pour in a steady stream into the beaten white, and beat with a whip as it is poured in, to blend well. Pour into

wetted molds, and let cool. Serve with a custard sauce made from the yolk and the milk, as usual.

OATMEAL PUDDING

2 cups cold cooked oatmeal
2 cups rich milk
¼ cup sugar or honey
⅓ cup seedless raisins
2 eggs
½ teaspoon vanilla flavor

Beat the eggs slightly, add the sweetening and the flavor, and mix with the milk. Work this gradually into the cooked oatmeal, pour into an oiled baking pan, and sprinkle the raisins over the mixture, working them in with the tip of a spoon. Place in a shallow pan of water, and bake in a medium slow oven until set and a light brown color. Let cool and serve.

BREAD CUSTARD PUDDING

1½ cups stale bread cut into squares
2 cups milk
1 large egg
¼ cup sugar
⅓ cup seedless raisins
Vanilla flavor

Spread the bread scantily with butter, cut into small dice, and put into a baking pan. Beat the egg and the sugar together slightly. Add a little vanilla and the milk. Mix well, pour over the bread, and let stand half an hour. Sprinkle the raisins over the top and work them into the mixture. Bake until set and a light brown.

CREAM RICE PUDDING

½ cup uncooked rice
5 cups milk
⅓ cup sugar
Vanilla flavor
2 teaspoons vegetable butter
⅓ cup raisins
A few grains of salt

Wash the rice in several waters, and drain. Add the milk, pour into an oiled baking pan, and cook over the fire, *stirring often,* until the rice begins to float. (It is the stirring that gives it the creamy consistency.) Add raisins, sugar, butter, and vanilla flavor, mix well, and set into the oven to cook until the rice is thoroughly done and the top slightly browned. Remove and let cool. A double boiler may be used instead of the baking pan, if desired, until the rice is cooked.

RICE CUSTARD PUDDING

Use the same proportions as in the preceding, but cook the rice and the milk in a double boiler until the rice is tender. Beat two eggs slightly. Add the sugar, the vanilla, and a sprinkle of salt, and into this pour the cooked rice gradually, stirring constantly. Pour into a well oiled baking pan, and bake slowly until set, but avoid letting it boil up, as that would cause it to whey. Remove and let cool. Raisins, if added, should be put into the hot rice before adding the eggs.

BLANCMANGE

2 cups milk
4 tablespoons cornstarch
3 tablespoons sugar or honey
White of 2 eggs
Vanilla flavor
A few grains of salt

Put the milk into a double boiler, and when it is boiling hot, add the sugar. Blend the cornstarch with a little cold milk, and pour gradually into the hot milk, stirring constantly. Cover, and let cook 15 minutes over a good fire. Add a sprinkle of salt to the whites, and beat them stiff. Flavor with vanilla, and over these pour the hot mixture gradually, and fold together. Turn into individual wetted molds, or into a large mold, and let cool. Turn out, and serve with cream, or with a custard sauce made from the yolks.

STRAWBERRY FLUMMERY

Use the recipe for blancmange. When cold, dish up in glasses, with crushed strawberries poured over it.

CRUMB CUSTARD PUDDING

1 cup rolled zwieback crumbs
3 cups hot milk
1 cup cold milk
⅓ cup sugar or honey
2 eggs
Vanilla
A few grains of salt

Pour the hot milk over the crumbs, and set aside for 10 minutes. Beat the eggs and the sugar together slightly. Add the vanilla, a few grains of salt, and the cold milk, and mix with the crumbs. Pour into a well oiled baking pan, and bake slowly until set and a light brown color.

ORANGE CREAM PUDDING

¾ cup water
½ cup orange juice
Rind of 1 small orange, grated lightly
2 tablespoons lemon juice
½ cup sugar
3 tablespoons cornstarch
1 egg separated
A few grains of salt

Put the water, the fruit juices, and the orange rind into a small saucepan, and bring gradually to a boil. Mix the sugar and the starch together thoroughly. Beat the white stiff; then pour the boiling liquid, slowly at first, into the sugar and starch, and stir smooth. Return it to the fire, and stir until it comes to a good boil; then pour it in a steady stream into the stiffly beaten white, beating with a whip as it enters the egg, until well mixed. Pour into wetted molds, and let cool. Turn out on sauce dishes, and serve with custard sauce made from the yolk, with milk, as usual.

PRESSED FRUIT PUDDING

Granose biscuit
Sugar
Stewed blackberries or strawberries

Lay the biscuit in a baking pan in a warm oven until thoroughly dried out and lightly browned. Pour the berries into a colander. Put a layer of crumbled biscuit in the bottom of a brick-shaped tin, dip enough of the juice over the biscuit to moisten it, sprinkle lightly with sugar, and cover with a layer of berries about half an inch deep; then repeat, having the berries on top. Set the pudding dish inside a larger pan; then put on top of the pudding, with a weight, a pan equal in size to that in which the pudding is. Let stand and press for several hours, or overnight. When ready to serve, cut in squares, and put a teaspoon of whipped cream on top of each serving.

PRUNE PUDDING

Soak dried prunes overnight. Cook them for 2 or 3 hours, with a few slices of lemon added to give them flavor. Drain, and save the juice separately. Put the prunes through a colander to remove the pits, sweeten with sugar if needed, and flavor with vanilla. Trim the crust off thinly from a loaf of fruit bread, and cut into slices about half an inch thick. Line a granite baking pan with the bread, pour over enough juice to soak up the bread, and

cover with the prune pulp about ½ inch deep. Repeat the process, leaving some of the prune pulp for the top. Put into the oven until it is barely hot through, so it will set. Cool, cut into squares, and serve with a teaspoon of whipped cream on top of each serving.

PRUNE WHIP

½ cup prune pulp
White of 1 egg
1 tablespoon sugar
A few drops of vanilla

Prepare prunes the same as for prune pudding. Beat the white stiff and dry, add sugar and vanilla, and beat again; then fold in the prune pulp. Serve on a sauce dish with a teaspoon of whipped cream on top.

DATE WHIP

Wash and pit the dates, and simmer them in little water until soft. Rub through a wire strainer, season with a small portion of lemon juice, and make the same as prune whip.

COTTAGE PUDDING

Cut rather thick slices of pound cake or loaf cake, lay in a small pan with cover, and warm slightly in the oven. Serve in a sauce dish with hot lemon sauce or vanilla sauce.

SAGO FRUIT MOLD

1 cup strawberry or blackberry juice (sweetened)
½ cup water
⅓ cup sugar
⅓ cup sago

Wash the sago, and drain well. Bring the liquid and sugar to a boil. Add the sago, and stir over the fire until transparent; then turn into wetted molds and let cool. Serve with cream, or a little whipped cream, or canned milk.

RICE CROQUETTES WITH JELLY

½ cup rice, raw
1½ cups hot water
1 tablespoon vegetable butter
A thin slice of lemon peel
1 egg
1 tablespoon sugar
A few grains of salt

Wash the rice thoroughly, drain, add the boiling water and the lemon peel, and let boil gently until the rice looks dry and the moisture is evaporated; then cover, and let steam over a slow

fire for 10 minutes. Beat the egg slightly, add the sugar and the butter, and mix into the rice while hot; then let cool. When cold, mold into round balls about the size of a large hen's egg. Make a dent in the top of each, brush over with cream, and bake in an oiled pan, to a light brown color. Serve with lemon sauce, and a small piece of red jelly on the top.

APPLE AND RAISIN PUDDING

4 cups chopped tart apples
¾ cup seedless raisins
1½ cups rolled zwieback
⅓ cup sugar
Grated rind and juice of 1 lemon
Vegetable butter
½ cup water

Pare, quarter, and chop the apples, and mix with the lemon juice and rind. Place a layer of the crumbs in an oiled baking pan, then a layer of apples. Sprinkle with sugar, small pieces of vegetable butter, and a layer of the raisins. Repeat until the dish is nearly full, finishing with a thin layer of crumbs on the top, and small bits of vegetable butter. Pour the water over, cover, and bake in a good oven until the apples are tender; then remove the top pan and brown lightly. Cool and serve.

BOILED CUSTARD

2 cups scalded milk
Yolks of 3 eggs
1 tablespoon honey or sugar
½ teaspoon vanilla flavor
A few grains of salt

Beat the egg yolks slightly, add the salt and the sugar, and stir constantly while adding the hot milk, in a slow stream. Cook in a double boiler, stirring constantly until the mixture thickens sufficiently to coat a silver spoon; then remove at once, set into a pan of cold water, add flavor, and let cool. If the milk is hot, it will take but a few moments to cook the yolk sufficiently; hence great care should be exercised not to curdle the eggs.

BAKED CUSTARD

4 cups scalded milk
4 eggs
¼ cup honey or sugar
½ teaspoon vanilla flavoring
A few grains of salt

Beat the eggs slightly. Add vanilla, sugar, and salt, pour in gradually the partly cooled milk, and mix well. Strain, and pour

into oiled molds or a baking pan. Set into a pan of water, and bake in a slow oven until set, which may be determined by running the point of a knife through the custard; if the knife comes out clean, the custard is done. It is very important that the water surrounding the custard does not quite reach the boiling point, or the custard will be watery. Eggs and milk in combination must be cooked at a low temperature.

BAKED CUSTARD (Soft)

Prepare and bake exactly the same as above, except that 3 eggs only are used, in the place of 4. This custard is nice if baked in a cup or mold in which it can be served, as it will be very tender.

CREAM PUFFS (9 Portions)

1 cup water
4 tablespoons vegetable butter
1 cup white flour
4 eggs
A few grains of salt

Add the salt and the butter to the water, and bring to a boil. Add the flour all at once, stir rapidly, and cook until the mixture shrinks away from the sides of the pan; then remove, and let cool partly. Add the unbeaten eggs, one at a time, mixing each in thoroughly with a wooden spoon until smooth and thick. Brush off from a tablespoon onto an oiled and slightly floured baking pan, leaving plenty of space between, and bake in a rather slow oven, with the heat from below at first, until the crust is firm and a light brown color. Let cool, split open in the side, and fill with whipped cream, or with the following cream filling.

Cream Filling

1 cup hot milk
3 tablespoons flour
2 tablespoons honey or sugar
1 egg
½ teaspoon vanilla flavor
A few grains of salt

Mix enough cold milk into the flour to make a perfectly smooth paste, stir gradually into the hot milk, and let cook for 15 minutes. Beat the egg, the sugar, and the salt together slightly; then pour in gradually the hot cream, stirring constantly. Return to the fire, and stir until it thickens, but do not boil. Remove, add the vanilla, and let cool.

VEGETABLE GELATIN (Agar)

Vegetable gelatin, or agar-agar, is a gelatinous substance prepared from seaweed in Japan and India. It is used in the East to thicken soup, etc. While it contains no nutritive matter, it serves as a vehicle for holding food together, as in fruit desserts, jellied entrées, etc. Its vegetable origin guarantees freedom from unwholesome and diseased products, and there is nothing about it to suggest "hoofs and horns."

AGAR JELLY

Put ½ ounce vegetable gelatin (agar) to soak in warm water for 30 minutes. Drain, and add 2 cups boiling water. Let boil gently for about 10 minutes, or until clear. Strain through a fine strainer or cheesecloth, and keep hot until ready for use. The jelly should measure 2 cups.

ORANGE JELLY

1 cup orange juice
6 tablespoons lemon juice
½ cup water
⅔ cup sugar
⅔ cup vegetable jelly

Dissolve the sugar in the fruit juice and water, and add the hot jelly. Mix well, pour into wetted molds, and let set.

LEMON JELLY

½ cup lemon juice
¾ cup sugar
1¼ cups water
⅔ cup vegetable jelly

Mix and mold the same as the foregoing.

BERRY MOLD

1½ cups juice from stewed and sweetened berries
½ cup sugar
4 tablespoons lemon juice
⅔ cup vegetable jelly

Mix and mold the same as orange jelly.

FRUIT JELLY

Arrange a nice assortment of fresh or cooked fruits, well drained, in a glass bowl. Take 1¾ cups light-colored fruit juice, add ¼ cup lemon juice, ¼ cup strawberry or loganberry juice, and sweeten to taste. Add ⅔ cup vegetable jelly, mix well, and pour over the fruit in the dish. Let set and serve.

PIES

PLAIN PASTRY No. 1

1½ cups pastry flour
6 tablespoons solid vegetable fat
⅛ teaspoon salt
About 5 tablespoons cold water

Mix the flour and the salt in a bowl. Add the fat, and cut into the flour with a silver fork, or with the tips of the fingers. (Avoid rubbing the ingredients between the hands, as that would make the mixture too oily.) Add the water slowly, and mix through the dry ingredients with a fork. Form lightly and quickly with the hands into a soft dough, and lay on a floured board. Use a light motion in handling the rolling-pin, and roll *from the center outward.*

PLAIN PASTRY No. 2

Use the same proportions as for No. 1, except use half entire wheat flour instead of all white flour.

BEATEN OIL CRUST

1¾ cups flour
About 5 tablespoons water
6 tablespoons best cottonseed or corn oil
⅛ teaspoon salt

Mix the flour and the salt in a bowl. Put the oil into a small bowl, and add the water in a slow stream, beating constantly to emulsify the oil. Pour onto the flour, and mix with a spoon, drawing the flour into the wetting from the sides to a medium soft dough. Turn out on a floured board, and use the same as plain pastry.

GRANO CRUST

¾ cup grano cereal
⅔ cup thin cream

Pour the cream over the grano cereal, and stir until the cream is absorbed. Then spread evenly on the bottom and sides of pie tin, using a spoon. Have the rim quite thick. Bake until done, and add filling.

CRUST SHELLS

Roll out either of the above pastries to cover a pie tin. Press well down into the tin. Then press off the surplus edge around the rim. Prick with a fork on bottom and sides, to keep the crust from blistering. Bake to a light brown.

APPLE PIE

Line a pie tin with crust. Sprinkle in the bottom a little flour mixed with a little sugar. Fill the plate with sliced or chopped tart apples, rounding it up a little. Dust with flour. Add 2 teaspoons vegetable butter to each pie. Sprinkle over about ½ cup or less of sugar, according to the tartness of the apple and the size of the pie. Run a wet brush around on the edge of the crust. Roll out a top crust, perforate with fork or knife, and lay on top. Press the edges together, trim, and mark by pressing the teeth of a table fork down on the rim of the crust all the way around. Brush over with cream or milk, and bake in a medium oven.

PRUNE PIE

Remove the stones from cooked prunes slightly sweetened. Roll out bottom crust as for apple pie. Add the stoned prunes, 1 tablespoon lemon juice, 1 teaspoon vegetable butter, and ¼ cup sugar or more. Cover with top crust, and bake the same as apple pie.

STRAWBERRY PIE No. 1

Wash and stem ripe strawberries. Roll them in powdered sugar, and fill a crust shell. Cover with whipped cream, cut, and serve.

STRAWBERRY PIE No. 2

Fill a crust shell with strawberry whip, as given in recipe on page 194. Cut and serve.

RAISIN PIE

1½ cups seedless sultana raisins
2 cups water
1 tablespoon cornstarch
⅓ cup sugar
1 tablespoon lemon juice
2 teaspoons vegetable butter

Wash the raisins thoroughly, lift them out of the water, then cover with cold water and let soak overnight. Add additional water to that remaining on the raisins, to make 2 cups liquid, and bring to a boil. Mix the sugar and the starch together thoroughly, add some of the boiling mixture, and stir smooth; then pour into the stewed raisins, and let boil continuously for 15 minutes. Set aside to cool.

Line a large pie tin with pastry. Add the cooked raisins, the lemon juice, and the butter, and cover with a perforated top crust. Brush with milk, and bake the same as apple pie. It is preferable to cook the raisins the day before using for pie, as they will have a better flavor.

PUMPKIN PIE

1⅓ cups canned pumpkin
1 cup milk
⅓ cup sugar
1 tablespoon molasses
1 tablespoon browned flour
2 teaspoons melted vegetable butter or a little rich cream
1 egg
½ teaspoon vanilla flavoring
A few grains of salt

Beat the egg slightly. Add molasses, salt, vanilla, melted butter, and sugar mixed with flour, and beat well. Add the pumpkin, and mix; then stir in the milk, and when thoroughly mixed, pour into a large pie tin that has been lined with pie crust, and bake until set and a light brown color.

PUMPKIN PIE WITHOUT EGGS

1½ cups canned pumpkin
Scant ½ cup sugar
4 tablespoons browned flour
1 tablespoon molasses
1½ cups hot milk
½ teaspoon vanilla flavor
A few grains of salt

Mix the sugar with the browned flour, and add to the pumpkin; then combine all the ingredients, and bake the same as above.

LEMON PIE

1 large cup sugar
1¾ cups water
4 tablespoons cornstarch
Grated rind of 1 lemon
3 tablespoons lemon juice
2 tablespoons vegetable butter
⅛ teaspoon salt
1 egg separated

Mix the sugar and the starch thoroughly. Bring water, salt, and lemon rind to a boil, pour gradually over the starch and sugar mixture, and stir smooth. Return to the fire, and boil until thick and clear. Separate the yolk from the white, beat the yolk and the lemon juice, and pour in a little of the hot mixture, stirring so as not to cook the yolk; then briskly stir the yolk mixture into the cooked starch, and continue to stir over the fire for a few moments, but do not boil. Set off the fire, add the butter, mix, and pour into a crust shell and set aside. Add to the white 1 tablespoon cold water and a sprinkle of salt, and beat until very foamy; then add gradually, while beating, 2 tablespoons sugar, and continue to beat until firm enough to spread nicely. Flavor with lemon extract, spread over the pie, and brown lightly in the oven.

Note.— The mixture should never be boiled after the lemon juice is added, as that would cut the starch and thin the mixture.

INDIVIDUAL PICNIC PIE

1 cup seeded raisins
1 cup walnut meats
2 cups chopped tart apples
Scant 1 cup sugar
Juice and rind of 1 lemon
1 egg

Chop the raisins, the nuts, and the apples. Put the sugar, the chopped apple, and the lemon juice and rind into a small saucepan, and cook for a few minutes over the fire. Add the chopped raisins and nuts, and stir until hot through; then add the slightly beaten egg, and stir until it takes up the moisture, but do not boil. Roll out pie crust, and cut with a large round cutter, or with a tin cover that has been perforated. Wet the edge of the crust, lay a large spoonful of the fruit a little to one side, turn the crust over it, and press the edges together. Brush with milk, and bake to a light brown color. If used for a large two-crust pie, omit the egg.

BANANA CREAM PIE

1½ cups milk
3 tablespoons flour
3 tablespoons sugar
1 large or 2 medium bananas
1 egg
A sprinkle of salt

Slice the banana into a baked crust shell. Heat the milk in a double boiler to boiling point. Stir the flour and a little cold milk or water to a smooth paste, and pour slowly into the hot milk, stirring as it is being added, and let cook for 15 minutes. Add 1 tablespoon of the hot cream, a sprinkle of salt, and the sugar to the yolk of egg, and mix well; then pour the hot cream in a slow stream into the yolk mixture, stirring briskly as it is being added. Stir over the fire for a few minutes, until the mixture thickens a little from the yolk, but do not boil. Pour over the sliced banana in the crust shell and set aside. Add 1 tablespoon cold water to the white of egg, and beat rapidly until very foamy; then add gradually 1 tablespoon sugar and a few drops of vanilla or lemon extract, and beat until firm enough to spread nicely over the top. Brown lightly in the oven, and let cool.

CUSTARD PIE

2 eggs
2 cups milk (scalded and partly cooled)
1 tablespoon flour
2½ tablespoons sugar or honey
½ teaspoon vanilla flavor
A few grains of salt

Mix the sugar and the flour together, and add to the slightly beaten eggs. Add the milk, the flavoring, and a sprinkle of salt, and mix well. Line a deep pie tin with pastry, and build up a well fluted rim. Strain in the custard, and bake in a quick oven at first, to set the rim; then decrease the heat, as egg and milk together must be cooked at a low temperature. Test with the point of a knife to see whether it is done; if the point comes out clean, the custard is done.

CUSTARD PIE No. 2

Mix and bake the same as above, except beat the yolks until thick, add the sugar, and fold into the beaten whites. Then add the milk (and a little more sweetening than for No. 1).

GREEN TOMATO PIE

Use medium small green tomatoes, pare thinly, and cut out the stem end. Have a pie tin lined with pastry. Add the sliced tomatoes, having the pie somewhat heaping full. Add about ⅔

cup sugar, mixed with 2 tablespoons lightly browned flour, 2 tablespoons lemon juice, small bits of vegetable butter, and a few grains of salt. Wet the edges, cover with a perforated crust, brush with milk, and bake the same as for apple pie.

GREEN TOMATO MINCE PIE

1½ quarts chopped green tomato	2 cups sorghum
1 quart chopped tart apple	1½ cups sugar
1 package seedless sultana raisins	6 tablespoons browned flour
¾ cup lemon juice	A sprinkle of salt

Pare the tomatoes thinly, and grind through a food mill set with a coarse knife, or chop with a knife. Grind or chop the apples in like manner, mix with tomato, lemon juice, sorghum, sugar, raisins, and a sprinkle of salt, and bring gradually to a boil. Blend the browned flour with cold water to a smooth paste, and add to the boiling mixture. Let boil continuously for 15 minutes, care being taken that it does not scorch; then set aside in a crock, in a cold place. Line a pie tin with pastry, add the cooked fruit, sprinkle with small bits of vegetable butter, cover with a perforated crust, brush with milk, and bake the same as apple pie. This filling should be made a few days before using, as it will have far richer flavor than if used freshly cooked.

BAKED APPLE DUMPLING

Pare and core tart apples, set each apple on a 4½-inch square of rolled pie crust, fill the cavity with sugar, wet the corners of the crust, bring them together on the top, and press together. Brush with milk, and bake to a nice brown color. Serve with lemon or vanilla sauce.

CAKES AND COOKIES

GENERAL RULES

1. Sift the flour once before measuring.

2. Line the bottom of tins with Manila paper, or oil the tins and dust them lightly with flour. Turn them over and tap them against the flour board to shake out all surplus flour.

3. Use *accurate* measurements.

4. Have the oven heated and the drafts closed.

5. Remove the cake from the oven as soon as it is done. Longer cooking dries it out. To test it, touch gently with the finger when about done. If it does not respond to a light pressure of the finger, close the oven gently, and let bake until there is a slight spring in the crust when pressed gently with the finger. Use a toothpick for testing a loaf cake. Leave cake in tins for 10 or more minutes after baking.

LAYER CAKE

4 eggs
2 teaspoons lemon juice
1 scant cup granulated sugar
1 tablespoon water
1⅓ cups sifted pastry flour
3 tablespoons melted vegetable butter
A few grains of salt
Vanilla flavor

Break the eggs whole into a round-bottomed mixing bowl, 3-quart or 4-quart size. Add the water, the lemon juice, the sugar, and a few grains of salt. Set the bowl into a pan of boiling water on the table, having the water about 2 inches deep, and beat quickly until the mixture is foamy and blood warm, or a little more; then remove from the water, set on the table, and beat until cold, and so light that the batter will pile as it runs from the egg whip. Add the flavoring, and mix; then sift half of the flour over the batter, and fold in lightly. Sprinkle the melted butter over the mixture, and fold in with a few careful strokes. Sift the remainder of the flour over the batter, and fold in lightly; then pour into 2 paper-lined cake tins, and bake in a medium oven from 10 to 12 minutes.

LOAF CAKE

2 eggs
4 tablespoons solid vegetable fat
¾ cup sugar
4 tablespoons cold water
1 tablespoon lemon juice
⅛ teaspoon salt
½ teaspoon vanilla flavoring
1 cup flour and 4 tablespoons cornstarch sifted together

Add ½ cup sugar to the solid fat, and cream until white and light. Add the remaining ¼ cup of sugar to the yolks, and beat

with a Dover beater until thick and lemon-colored. Work the yolk mixture into the creamed fat; then add the salt, the flavoring, and the liquids gradually, stirring as they are being added. Add the sifted flour and starch, and fold together with a spoon until smooth. Add a pinch of salt to the whites, and beat them stiff and dry. Fold into them the batter, using a spoon, so as not to break down the lightness of the eggs unnecessarily. Pour into a paper-lined or oiled tin, and bake in a *slow* oven to begin with, and increase the heat so as to brown lightly, which requires from 20 to 35 minutes, according to the thickness of the loaf.

JELLY ROLL

Line a baking pan with Manila paper. Spread layer cake mixture about ½ inch deep on the paper, and bake on the top grate in a quick oven. Lay a sheet of Manila paper on the table, and sprinkle lightly with sugar; then as soon as the cake is done, turn bottom side up on the sugared paper, and carefully remove the paper from the bottom of the cake. Spread the cake with red jelly; then take hold of the edge of the paper with the fingers, and roll the cake into a roll, with the sugared paper around to hold it together until cold.

WHITE MOUNTAIN CAKE

Whites of 4 eggs
½ cup sifted pastry flour
½ cup sugar
2 teaspoons lemon juice
A few grains of salt
¼ teaspoon each of lemon and vanilla flavor

Measure out all the ingredients before commencing to put the cake together. Sift the flour and the sugar four times separately. Add a few grains of salt to the whites, and beat until foamy, but not stiff. Add the lemon juice and the flavoring, and sift in the sugar slowly, beating constantly. Use care not to make the mixture stiff. Sift the flour over slowly, and mix, using the folding motion. Bake in an unbuttered pan 20 minutes or more, having a small pan of hot water under the cake while baking. When done, turn upside down on a rack, and leave in the pan until cold. Cover with plain icing.

Harvesting Coconuts in the Philippines

CUP CAKES — Mr. Hook's

2 eggs
¼ teaspoon salt
½ teaspoon vanilla flavor
¼ cup boiling water
½ cup sugar
¼ cup corn sirup
¼ cup vegetable oil
1½ cups pastry flour
1 cup raisins or chopped nuts, or desiccated coconut; or they may all be left out, and the cake baked plain, in oiled gem pans, or in layer cake tins, or loaf cake tins.

Break the eggs into a bowl, add the salt and the vanilla, and beat with a Dover beater until thick. (The salt hastens the beating of eggs.) Add the boiling water gradually, beating constantly; then add the sugar in the same manner. Next add the oil and the

corn sirup, and beat a few strokes; then add the sifted flour, and fold together. If raisins or chopped nuts are used, they should be added after the flour. Bake in oiled gem pans, in a medium slow oven, the same as loaf cake.

FAVORITE POUND CAKE

½ cup solid vegetable fat
Scant 1 cup sugar
⅛ teaspoon salt
2 teaspoons lemon juice
½ teaspoon vanilla flavor
3 eggs
Scant 1½ cups flour

Put the solid fat into a bowl. Add the salt and the lemon juice, and cream with a spoon until smooth and white. Add the sugar gradually, and continue stirring until very light and creamy. Add the eggs, one at a time, and beat until light. Fold in the flour, pour into an oiled pan, and bake in a slow oven, about 40 minutes, the same as loaf cake.

FRUIT CAKE — Mr. Hook's

1 cup sugar
¾ cup solid vegetable fat
4 eggs
⅓ cup molasses
1 teaspoon vanilla
3 cups raisins
½ cup diced lemon peel
½ cup diced orange peel
1½ cups diced citron
½ cup chopped walnuts
2 cups flour

Put the fat, the sugar, and the vanilla into a bowl, and work until white and creamy. Add a few grains of salt to the eggs, beat with a Dover beater until very light, and work into the creamed mixture. Add the molasses, and beat a few hard strokes. Then add the fruit and the nuts, and mix thoroughly. Lastly fold in the flour, and bake in a slow oven from 1 hour to 1½ hours, depending on the thickness of the cake. When orange and lemon rind are unobtainable, use raisins or currants instead.

VANILLA COOKIES — Mr. Holmden's

½ cup sugar
6 tablespoons solid vegetable fat
⅛ teaspoon salt
1 teaspoon vanilla flavor
1 tablespoon milk
1 egg
About 2⅓ cups flour, or enough to make a medium *soft* dough

Put fat, salt, vanilla, and milk into a bowl, and work with a spoon until creamy. Add the sugar gradually, stirring constantly until well creamed and white. Mix in the well beaten egg, and fold in the flour to a rather soft dough. Divide into 2 or 3 pieces so as to be handled more easily, and roll out on a well floured board to ¼-inch thickness. Cut with a floured biscuit cutter, lay in baking pan, and bake in a medium *slow* oven to a very light brown color.

ROLLED OAT COOKIES — Mr. Hook's

½ cup sugar
5 tablespoons solid vegetable fat
2 teaspoons molasses
⅔ cup seedless raisins
1 cup rolled oats
¾ cup flour
1 egg
A few grains of salt

Add the sprinkle of salt and the molasses to the fat, and work together in a bowl. Add the sugar gradually, and cream the mixture until white and very light. Add the well beaten egg, and mix. Add the raisins, then the oats, and lastly the flour. Mix lightly, and press off from the side of a tablespoon onto an oiled baking pan, leaving a little space between, and bake in a medium *slow* oven, to a delicate brown.

BRAN-FRUIT COOKIES — Mr. Hook's

½ cup sugar
5 tablespoons solid vegetable fat
2 teaspoons molasses
⅓ cup chopped walnuts
⅓ cup seedless raisins
1 cup bran
¾ cup flour
1 egg
A few grains of salt

Cream together fat, sugar, salt, and molasses. Add the beaten egg, and mix the same as for oat cookies; then add the other ingredients in the order given, and bake the same as for oat cookies.

ICINGS AND FILLINGS

BOILED FROSTING

⅔ cup sugar
¼ cup water
White of 1 egg
Flavor

Dissolve the sugar in the water, and continue to stir until it boils. Then let boil undisturbed until a *long, hair-like thread* will blow from a spoon dipped in the sirup and lifted. Pour it in a slow stream into the beaten white, beating as it is being poured in. Add flavoring, and beat until light and creamy, and cold enough to spread on cake.

PLAIN ICING No. 1

Add confectioner's sugar (powdered sugar) to a small amount of light-colored fruit juice,— pineapple, pear and lemon, or lemon juice and water. Stir in enough sifted sugar to form a consistency to spread on cake. This icing will not dry out as quickly as boiled icing, and it forms a crust over the surface very readily.

ICING No. 2

Make the same as No. 1, except use cream or milk, or egg yolk, or both, as wetting, in the place of water or fruit juice.

CARAMEL ICING

Stir ¼ cup granulated sugar in a small saucepan over the fire until well browned; add ¼ cup water, and let boil gently until dissolved. Let cool, then add 2 teaspoons lemon juice and enough powdered sugar to spread on cake.

ORANGE FROSTING

2 tablespoons orange juice
Rind of 1 orange (grated lightly)
1 teaspoon lemon juice
Yolk of 1 egg
Powdered sugar

Add the rind to the juices, and let stand for 20 minutes. Press out through cheesecloth, and add to the beaten yolk. Add confectioner's sugar until of a consistency to spread on the cake and not run.

ORNAMENTAL FROSTING

For lettering and ornamenting a cake, use the following: Beat one white of egg until frothy but not stiff. Add sifted powdered sugar gradually, beating constantly until so thick that it will not run on a plate. Make a small funnel of a good grade Manila paper. Put a teaspoonful of the frosting into the funnel, cut a little piece off the point of the funnel, and press out the sugar in the form of letters and simple decorations. In making roses and leaves for decoration, the frosting must be stiff enough to hold up when pressed out, to retain the shape of leaves, etc.

LEMON FILLING

1 cup sugar
3 tablespoons flour
Grated rind of 1 large lemon
4 tablespoons lemon juice
2 teaspoons vegetable butter
1 egg

Sift the sugar and the flour together, beat the egg slightly, mix all the ingredients, and cook in a double boiler until thickened, stirring often. Let cool, and spread between layers of cake.

APPLE-CREAM FILLING

¾ cup grated tart apple
2 tablespoons lemon juice
¾ cup sugar
1 egg
A sprinkle of salt
1 tablespoon vegetable butter

Mix the apple, the lemon juice, and the sugar, and cook in a double boiler until well scalded. Add a sprinkle of salt to the egg, and beat well. Pour in the hot apple mixture gradually, stirring or beating as it is being added. Return to the double boiler, and stir until it thickens; then remove, and stir in the butter until well blended. Let cool.

ORANGE FILLING

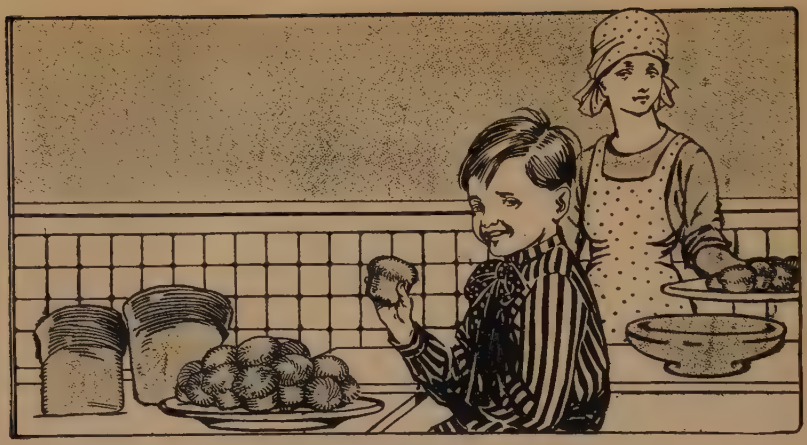
½ cup sugar
Grated rind of ½ orange
⅓ cup orange juice
1 tablespoon lemon juice
1 egg slightly beaten
2 teaspoons vegetable butter
2½ tablespoons flour
A few grains of salt

Mix the sugar and the flour thoroughly, mix all the ingredients, and cook in a double boiler, stirring constantly until thickened; then cool.

STRAWBERRY FILLING

1 cup crushed strawberries
½ cup heavy cream
Sugar to taste

Whip the cream, and fold in the sweetened and crushed berries. Spread between cakes.



XX. TOASTS, BREAKFAST DISHES, CEREALS, EGGS, SANDWICHES

"Appetite is the best sauce."

TOASTS

Toasts are especially nice for breakfast. They are a light food, yet appetizing and nourishing.

STRAWBERRY TOAST

Bring fresh strawberries to the boiling point with enough sugar to sweeten. When done, dip a piece of zwieback into the juice to soften, lay on a platter, and cover with strawberries. Pour a spoonful of juice over all, and serve. The juice may be thickened a little with cornstarch if desired, before dishing up.

CREAM TOAST

Moisten zwieback in hot thin cream, lay on a platter, pour a spoonful more of cream over, and serve.

PRUNE TOAST

Rub well cooked prunes through a fine colander. Add enough of the prune juice to make it of the consistency to spread on toast and not run off. Reheat, and dip a slice of zwieback in hot milk or prune juice to soften, lay on a platter, and cover with the prune pulp.

CREAM PEAS ON TOAST

¾ cup green pea pulp ¼ cup thin cream
Salt to taste

Bring the peas to a boil, drain off the liquid, and mash the peas through a colander, having them separate from the liquid in which they were cooked. Add the hot cream, and salt to taste. Reheat, dip a piece of zwieback in hot milk to soften, lay on a platter, and cover with cream peas, which should be thick enough not to run off.

BANANA CREAM TOAST

1 cup milk 1 tablespoon sugar or honey
¼ cup cream or canned milk 1 tablespoon flour
2 bananas

Heat the milk to boiling point, thicken with the flour stirred smooth with a little cold milk, and let cook 10 minutes. Remove from the fire. Add the sugar, a pinch of salt, cream or canned milk, and the sliced bananas. Shake together, reheat for a few minutes, and serve on toast, or on zwieback dipped in hot milk.

RAISIN TOAST

Wash seedless sultana raisins, and stew gently for 30 or 40 minutes, with just enough liquid to season them nicely. Thicken very slightly (during the boiling period) with cornstarch made smooth with cold water. Dip slices of zwieback into hot milk, or into the liquid of the stewed raisins, and cover with the stewed fruit.

SNOWFLAKE TOAST

1 cup milk 1 tablespoon vegetable butter
1 tablespoon flour White of 1 egg
A few grains of salt

Rub the butter and the flour together in a saucepan over the fire, add a little of the milk, and stir until smooth and free from lumps. Add the remainder of the milk, and boil up. Salt to taste. Beat the white stiff, and pour the hot sauce gradually into the white, beating with egg whip to mix well. Serve on zwieback dipped in milk, or on toast.

WALNUT CREAM TOAST

1 cup hot milk — Chopped walnuts
1½ tablespoons vegetable butter — 1½ tablespoons cream roast flour
Salt to taste

Rub the flour and the butter together in a small saucepan. Add ⅓ cup milk, and stir smooth. Add the remainder of the milk, and boil up. Salt to taste. Dip a slice of zwieback into hot milk to soften, lay on a platter, and spread over with a spoonful of cream sauce. Sprinkle finely chopped walnuts over the cream toast, and serve immediately.

CREAM TOMATO TOAST

Dip a slice of zwieback in hot milk or tomato juice, lay on a platter, and cover with a spoonful of cream tomato sauce.

CEREALS

Cereals are among the most important of food materials. Chief among them are wheat, corn, oats, rice, etc., and their products. An effort should be made to secure freshly milled, entire cereals, such as cracked wheat, ground whole corn meal, natural brown rice, etc., in the place of the devitamined and devitalized commercially prepared cereals, meals, and flours so commonly used. Ground whole cereals are rich in natural salts and flavors, which are sadly lacking in the refined products, and they require less shortening and sugar in their preparation.

Generally speaking, the breakfast cereals may be separated into two classes; namely, granular and flaked. Granular cereals require more water than the flaked, because they contain more material. The following are general rules for cooking some of the more well-known cereals:

General Rules for Cooking Grains.— Add salt to boiling water in the inside part of a double boiler. Add the dry grains slowly to the boiling water, stirring constantly. Let boil undisturbed until the cereal begins to thicken; then put on the cover, and set in the outside part of the double boiler, which should be filled a third full of boiling water. Cook slowly, covered, for 3 hours or more, and keep up the quantity of water in the outside boiler if this should

boil away. Cereal cooked in a fireless cooker, of course, needs no further attention after the compartment is covered. Dates or steamed raisins lightly stirred in, a few minutes before the cereal is removed from the fire, make a pleasing variety.

CRACKED WHEAT

1 cup cracked wheat — 4 cups boiling water (or more)
1 teaspoon salt

Follow general rules for cooking the grain, as given above.

ROLLED OATS

1 cup rolled oats — 3 cups boiling water
Scant 1 teaspoon salt

Proceed the same as for cracked wheat.

CORN MEAL MUSH

1 cup corn meal — ¾ cup cold water
2½ cups boiling water — 1 teaspoon salt

Blend the corn meal with the cold water, add to the boiling water, and stir until it reaches the boiling point. Let boil quite rapidly until it begins to thicken; then set in the outer part of a double boiler, or into a fireless cooker, and finish the same as for rolled oats.

BROWNED CORN MEAL MUSH

Prepare and cook the same as above. When thoroughly cooked, pour into an oiled brick-shaped tin (bread tin); and when cold, slice ½ inch thick, and brown slowly in a slightly oiled skillet or in a good oven. Serve with maple sirup or honey.

STEAMED NATURAL RICE

1 cup natural brown rice — 3½ cups water
¼ teaspoon salt

Wash the rice thoroughly, drain, add the water and the salt, and let boil continuously until the cereal is tender and the liquid reduced down dry. Set in the outer boiler, or on the edge of the stove, and let steam for 15 minutes.

Note.— It should be remembered that a wide saucepan has more evaporation surface than a deep, narrow vessel, and that con-

sequently, the larger or wider the vessel in which the rice is cooked, the more water will be required, proportionately.

WHITE RICE

Cook the same as natural rice, except use 1 cup less of liquid than for the same amount of natural brown rice.

BROWNED RICE

½ cup natural rice — 1¾ cups boiling water

Put the rice into a small frying pan, and stir over the fire until a very light brown color. Add the boiling water, and cook the same as for steamed natural rice.

CREAMED RICE

Add sufficient hot cream, or milk and a little butter, to the above steamed rice to make it creamy but not too soft. Reheat and serve.

BANANA RICE

Slice two bananas into the above hot creamed rice. Cover, let stand five minutes, and serve.

STEAMED WHEAT

1 cup cleaned wheat — 5 cups hot water
¼ teaspoon salt

Wash the wheat in several waters, and let soak overnight. Drain, add the salt and the hot water, and let boil over the fire for half an hour; then set in a fireless on a hot stone overnight. In the absence of a fireless, cook the same as steamed rice.

STEAMED PEARL BARLEY

1 cup pearl barley — 5 cups hot water
¼ teaspoon salt

Soak the barley in cold water overnight, drain, add the hot water and the salt, and cook the same as for steamed wheat.

GRAHAM FRUIT MUSH

1 cup Graham flour — 1 cup cold water
2 cups boiling water — 1 cup dates or figs
Scant teaspoon of salt

Blend the Graham flour with the cold water, add the boiling water and the salt, and let cook over the open fire until it thickens; then set in an outer boiler, and cook for an hour or more. Wash and stone the dates, cut lengthwise into quarters, and add to the mush about 10 minutes before serving. If dried figs are used, they should be steamed first, or else washed, sliced, and cooked with the grain.

GRANO CEREAL WITH DATES

2 cups boiling water 1 cup grano cereal
10 dates

Sprinkle the cereal into the boiling water, and stir until thick. Add the stoned and quartered dates, mix, and serve with cream.

EGGS

Egg albumen (the white of egg) usually receives first consideration in the cooking of eggs. The white begins to coagulate at about 180° F.; and if kept in the water at slightly below the boiling point for 10 minutes, the white forms into a jelly-like consistency, and the yolk is partly cooked. Boiling water hardens the white; and if subjected to dry heat, it becomes of a leathery consistency.

BOILED EGGS

Let the eggs down into boiling water with a spoon, and boil 2½ to 3 minutes for soft, and 4 minutes for medium. *Serve at once.* Hard-boiled eggs should remain in the water for 20 minutes.

POACHED EGGS

Bring water to a boil in a saucepan, with a little salt to flavor. Break the eggs one at a time into a sauce dish, and let down gently into the hot water. Set where the water will keep just below the boiling point; and when the white is "set," lift out on a perforated spoon, and place on toast, or on a warm dish, and serve.

SCRAMBLED EGGS

Break 2 eggs into a bowl, add 1 tablespoon milk, and beat only slightly. Oil a frying pan, and when hot, add the eggs and a

sprinkle of salt, and scrape the bottom of the pan continuously with a silver spoon until the mixture is soft and jellied. Remove the eggs from the fire while they are softer than wished for serving, as they will continue to cook and harden after they are removed from the fire. If salt is added before eggs are partly cooked, it tends to give them a red color.

SCRAMBLED EGG WITH NEW TOMATO

Scald and peel 2 medium sized ripe tomatoes, cut them into quarters, and put on the stove in a small covered saucepan. Add a little salt, and bring to a good boil. Turn them into a colander, and drain off the juice; then add 1 teaspoon vegetable butter, and reheat. Have a skillet oiled. When hot, break in 2 eggs. Stir quickly, so they will cook evenly. When they are soft cooked, add the tomatoes, mix lightly, and serve on toast.

STEAMED EGGS

Oil a skillet, and when slightly hot, break in the eggs, and sprinkle over them about 3 tablespoons or more of water for every 2 eggs. Sprinkle lightly with salt, cover with a tight-fitting cover, and cook over a medium fire until white over the top, like a poached egg, at the same time soft cooked. Remove, and serve immediately.

JELLIED OR CODDLED EGG

Put 1 pint of water into a small saucepan, and bring to a boil. Drop 1 egg into the water with a spoon, and set the vessel on the table for 7 minutes. Remove from the water and serve. If more eggs are added, the water must be increased in proportion. Likewise, if the saucepan is wide-mouthed or broad, there must be more than enough boiling water to cover the eggs. The rule is a pint to an egg in a deep utensil.

PLAIN OMELET

Beat 2 eggs slightly. Add 1 tablespoon milk and a sprinkle of salt. Put 2 teaspoons vegetable butter in a (preferably round and hollow-bottomed) frying pan, and when quite hot, add the eggs, and keep them continuously in motion, by shaking the pan, or by constantly working with a silver fork as for scrambled egg, at the

start. When the mass is soft cooked, let rest on the fire as you pick up one side with a spoon or a fork, fold over to the other side, and turn out on a hot platter. Serve immediately.

OMELET PUFF

1 egg 1 tablespoon milk Salt

Beat the yolk until thick, add the milk, and mix well. Add a few grains of salt to the white, and beat until stiff. Fold the yolk mixture into the white, and turn into a hot oiled frying pan. Put into the oven, and bake until barely set; then, while it is still in the pan, turn one half of the omelet over the other half by slipping a knife under one side and turning it over the other section. Invert on a hot platter, and serve at once.

BREAD OMELET

Make the same as omelet puff, except that ¼ cup fresh bread crumbs are added, after being moistened with sufficient cold milk to soften. Add the softened crumbs to the beaten yolk, and fold into the beaten white. Bake the same as omelet puff.

SANDWICHES

In a family where lunches have to be put up, it is a very important matter to know how these lunches may be prepared in a wholesome manner. For making sandwiches, the bread should be reasonably fresh, should be cut thin and even, and spread scantily with butter. Then spread filling on one slice, place the other slice over, and cut into desired size and style.

NUT AND JELLY SANDWICH

Add chopped walnuts to jelly, and spread on buttered bread.

NUT BUTTER AND OLIVE SANDWICH

Dissolve the nut butter with cold water to thick cream. Add chopped olives. Serve a leaf of lettuce and mayonnaise between slices if desired.

NUT AND TOMATO SANDWICH

Mash equal parts of nuttolene and tomato to a paste with a fork. Season. Serve with lettuce leaf and mayonnaise.

EGG SANDWICH

Chop hard-boiled eggs very fine, season with mayonnaise, and serve with lettuce leaf.

BEAN SANDWICH

Spread bean *purée* on buttered bread, using lettuce and mayonnaise dressing.

TOMATO SANDWICH

Peel tomatoes, slice thin, and serve with mayonnaise.

EGG AND TOMATO SANDWICH

Scramble eggs soft. Add an equal quantity of stewed, drained tomatoes. Mix well, let cool, and use.

DATE AND NUT SANDWICH

Grind walnuts and dates through a mill. Season with lemon juice.

HONEY AND NUT SANDWICH

Use ½ cup honey, 1 tablespoon lemon juice. Add chopped walnuts to make stiff paste.

RAISIN SANDWICH

Chop ½ cup seeded raisins and ½ cup walnuts very fine. Add 1½ tablespoons mayonnaise and 1 teaspoon lemon juice. Mix into paste, and spread on scantily buttered bread.

NUT AND FRUIT SANDWICH

Grind equal parts of steamed dried figs and seeded raisins together through a mill, or chop fine. Add enough chopped walnuts to spread nicely on bread. Season with lemon juice.

CUCUMBER SANDWICH

Slice cucumbers thin. Add grated onion and salt to taste. Butter the bread thinly. Fill between slices with cucumber, lettuce leaf, and mayonnaise or salad dressing.

PICNIC SANDWICH

Put ⅔ cup tomato pulp and 2 teaspoons vegetable butter into a small saucepan, add salt to taste, and bring to a boil. Beat 2 eggs, and pour in gradually the hot mixture; then return it to the

A tramp over the hills to make one's appetite keen.

fire, and continue to stir until thickened slightly, but do not boil. Roll 8 white crackers fine, and add sufficient to make a mixture that will spread nicely. Let cool, and use as filling between thin slices of scantily buttered bread.

SAVORY EGG SANDWICH

3 eggs
1½ tablespoons vegetable butter
2 tablespoons chopped onion
⅓ cup stewed tomato

Put the butter and the onion into a small saucepan, and let simmer together to soften the onion. Add the tomato, and bring to a boil. Add the beaten eggs all at once, and continue to stir rapidly until soft scrambled and evenly cooked. Salt to taste, let cool, and use the same as for picnic sandwich.

PIMENTO AND COTTAGE CHEESE SANDWICH

Mix creamed cottage cheese with chopped pimento. Cut thin slices of white bread lengthwise of the loaf. Spread liberally with mayonnaise, then with a layer of the cheese mixture. Lay a slice

of bread over this, and spread with mayonnaise, then with a layer of the cheese mixture. Repeat until you have a thickness of 5 or 6 slices (like layer cake). Cut and serve the same as layer cake.

OLIVE AND TOMATO SANDWICH

1 cup chopped tomato (thick part only)
½ cup chopped ripe olives
Mayonnaise

Mix the ingredients, and serve between slices of slightly buttered bread.

CELERY AND OLIVE SANDWICH

Chop celery very fine, and add chopped olives in the proportion of 2 parts celery to 1 part olives. Season with mayonnaise, and make the same as above.

OLIVE AND BELL PEPPER SANDWICH

½ cup finely chopped sweet pepper
2 teaspoons chopped onion
½ cup chopped ripe olives
Mayonnaise

Mix and spread the same as above.

SPINACH AND EGG SANDWICH

1 cup chopped cooked spinach
4 hard-boiled eggs chopped fine
1 teaspoon chopped onion
Mayonnaise

Mix and spread the same as above.

CARROT AND PEAS SANDWICH

1 cup grated young carrot
1 cup cooked peas (drained)
Mayonnaise or cream mayonnaise

Mix, and spread slices of bread the same as above.

TARTAR SANDWICH

Chop the following vegetables fine: green onion, cucumber, sweet pepper, celery, lettuce, and tomato (solid part). Press out

most of the superfluous water, and season with plenty of mayonnaise and chopped parsley. Serve between slices of bread, the same as above.

STUFFED EGGS

Put eggs into boiling water, and let simmer for 20 minutes; then drain and put into cold water. When cold, remove the shells, and split through lengthwise. Mash the yolks through a strainer, and season with finely chopped olives, sweet pepper or chopped pimento, and oil and lemon juice or a little mayonnaise. Refill the whites with the yolk mixture, having them well rounded, and serve on lettuce leaves.

XXI. COOKERY FOR THE SICK

"Every seeker after health should be absorbed by the thought that better health is possible."

Most women can prepare a satisfactory meal for those who are well; but when a member of the family succumbs to disease, then the question of feeding becomes one of supreme moment. A normal appetite in a state of health is more or less a safe guide to follow in the choice of foods best suited to the needs of the body. But in sickness, the appetite is so often perverted by disease conditions, that its cravings cannot safely be considered; therefore the patient should not be consulted as to his menu, nor should conversation relating to his diet be carried on within his hearing. The physician in attendance has studied the symptoms, and is best able to determine what is required to meet the needs of the case.

So far as possible, let the element of pleasant surprise enter into the planning of the invalid's meal. Nervous patients especially are likely to be depressed in the early morning; therefore the breakfast tray should be made as attractive as possible, by the use of a bright flower or two. Some important considerations in the care and feeding of the sick follow:

1. *Appeal to the sense of sight.* Foods that are pleasing to the sense of sight stimulate the flow of digestive juices, while disagreeable sights and odors hinder the same.

2. *Appeals to the sense of taste.* All eating is influenced by the sense of taste. Some foods that might be easily digested if tastily prepared, may prove indigestible if repugnant to the patient.

3. *Temperature of food and dishes.* The temperature of food served to the sick has a marked influence on the digestion. Therefore hot foods should be served as hot as possible, and cold dishes as cold as is consistent with digestion. If food must be carried some distance to a patient, devise means of keeping it hot *en route.* Heat cups and platters before using them to serve any food for the sick.

4. *Quantity.* Bring to the patient at each meal only the quantity that is likely to be eaten, so far as can be judged. A large amount may so discourage a weak appetite that nothing will be eaten. The same thought applies in regard to too much decoration for the tray. As one has well said, "It is as much out of place to send a large bouquet of flowers on a tray, as to serve a whole plum pudding."

5. *Nutritive value of foods.* The nurse should be a student of the classification of foods, their fuel value and digestibility, thus being able to regulate properly the rations for her patients.

6. *Gruels.* In the preparation of gruels from uncooked cereals, the rules for cooking all starchy foods should be observed. The dry grain should be added to *boiling* water, and subjected to long, slow cooking. It should be carefully seasoned, and of a consistency to be taken through a siphon. Most gruels are made more palatable by the addition of a little cream just before serving. In a few special cases, however, milk and cream would not be permissible; hence inquiry should be made of the physician in charge if there is any question about the case.

Some patients, during the early stages of convalescence, have an abnormally large appetite, which, if not restricted, would lead to overfeeding, and thus prove injurious; while with others, the appetite needs to be stimulated.

The best means of stimulating the appetite is good, wholesome food, well cooked and attractively served. While the invalid's meal should generally be of a simple nature, there should be the greatest

daintiness in serving it; and an effort should be made to create a desire for food, to replace the distaste that often exists. The tray should be covered with spotless linen, and should not have the appearance of being overcrowded. If a small amount is served, have a small tray.

INVALID RECIPES

OATMEAL GRUEL

¼ cup oatmeal
2 cups hot water
A few grains of salt
Cream or milk if desired

Sprinkle the oatmeal into the boiling water, and let it continue to boil until it begins to thicken slightly; then set in a double boiler, and let cook for 2 hours. Strain through a fine strainer, and dilute it with a little hot water if it is too thick. Reheat, and season with salt, and cream if desired.

CORN MEAL GRUEL

Put ¼ cup corn meal into a small saucepan, and blend with ¼ cup cold water. Add 2 cups boiling water and a few grains of salt, and proceed to cook and finish the same as oatmeal gruel.

GLUTEN GRUEL

Put 3 tablespoons gluten meal into a small saucepan, and blend with 4 tablespoons cold water. Add 1 cup of boiling water, and let boil up well, or until of the desired consistency. Strain, and season with a little cream, if admissible.

GRANOSE GRUEL

Crush 2 granose biscuits in a small saucepan, add 2 cups of boiling water, and let boil for a few minutes. Strain, and season the same as for gluten gruel.

FLAKE GRUEL

Add toasted rice biscuit or corn flakes to boiling water in a small saucepan, until of the desired consistency. Strain, and season the same as for gluten gruel.

CRACKER GRUEL

Put 3 tablespoons cracker meal into a small saucepan, and blend with 4 tablespoons of cold milk. Add ¾ cup of boiling milk, and let cook until of the desired consistency. Strain and serve.

RICE GRUEL

Wash ¼ cup of natural rice thoroughly, and drain. Add 3 cups of boiling water, and let boil gently until well done. Mash through a colander; then strain through a fine strainer, and season the same as for oatmeal gruel.

BROWNED FLOUR GRUEL

Blend 4 tablespoons browned flour with 5 tablespoons cold milk, and make smooth. Add 1 cup hot milk, and bring to a boil. Add salt to taste, strain, and serve.

WHITE FLOUR GRUEL

Add gradually 3 tablespoons cold milk to 2 tablespoons white flour, and mix until smooth and free from lumps. Add 1 cup hot milk, and bring gradually to the boiling point; then set in an outer boiler, and let cook for 10 to 20 minutes. Salt to taste, strain, and serve.

BARLEY WATER

Wash ¼ cup of pearl barley, and let soak overnight. Drain and wash thoroughly. Add 1 quart of water, and let boil gently until the barley is thoroughly done, and the liquid measures about 1½ cups. Serve plain, with salt to taste, or with cream, as the case may require.

RICE WATER

Wash ¼ cup natural rice, add 3 cups water, and let boil gently until well done. Strain lightly, and season the water with a little salt and cream, if admissible.

TOAST WATER

Cut 2 slices of bread about ⅓ inch thick, remove the crust, and bake in a slow oven until thoroughly dried and well browned. Break into pieces, add 1½ cups of boiling water, cover, and let

stand 1 hour. Squeeze through a cheesecloth, reheat, and serve plain, or season with a little cream, or as directed by the one in charge.

FLAXSEED TEA

Wash ¼ cup of flaxseed thoroughly, drain, and add 3 cups of boiling water. Let boil gently until well done, which will require from 1 to 2 hours. Drain, and season the liquid with lemon juice and a sprinkle of salt. A little sugar may be needed.

BRAN TEA No. 1

To clean, uncooked bran, add water at a temperature of 120° F. Cover, and set on the back of the stove to draw for 6 hours, being careful that it does not get hot. Strain, and serve plain, or seasoned with a little rich cream. If cold water is used in the place of warm water, the bran should be allowed to soak overnight. Strain and serve immediately.

BRAN TEA No. 2

Wash a good grade of potato parings, add cold water, and let simmer very slowly for 2 to 3 hours, using great care that they do not cook, except enough to extract the salts. Strain, mix with the bran tea, and serve.

VEGETABLE WATER

Wash 2 bunches of spinach, or other tender green vegetable tops, in several waters. Add 2 carrots, scraped and sliced, 2 turnips, 2 green onions, 2 parsnips, or salsify, and a little cabbage. Cover with plenty of cold water, add salt to taste, and bring gradually to a boil. Let boil gently for 2 or 3 hours, or longer, if convenient, then drain well. Salt to taste, and serve plain, or with chopped parsley and soup royale. (See also page 124.)

VEGETABLE BROTH (Special)

2 cups thinly sliced raw potato
1 cup sliced bleached lettuce
1 stalk celery
1 sprig parsley
1 teaspoon chopped green onion
½ cup thick cream (or 1 beaten egg)
½ teaspoon salt
2 beet leaves (if at hand)
4 cups cold water

Slice or chop the vegetables fine, add the cold water and the salt, and let boil slowly for 30 minutes or more. Cook the cream

down in a skillet or a saucepan until the free fat separates and the albumen turns a light golden brown color. Remove from the fire, and pour off as much of the free fat as possible. Break up the vegetables slightly, with a spoon, but do not mash, and drain carefully into the browned cream. Bring to a boil, salt to taste, and let simmer slowly for 10 or 15 minutes; then strain, skim well, and serve with small toasted crackers. When egg is used in the place of cream, heat 2 tablespoons of vegetable fat in a saucepan, and add the beaten egg. Stir constantly until all the small particles are a light golden brown; then use the same as the browned cream albumen.

HOT MALTED MILK

Put a heaping tablespoon of malted milk into a small saucepan or an earthen pot. Add enough warm water to mix to a perfectly smooth paste. Add boiling water sufficient to make a cupful, mix well, and serve immediately.

ALBUMENIZED WATER

White of 1 egg
½ cup water

Stir the white of the egg (using a silver fork), that the albumen may easily dissolve as the water is added gradually. Add a few grains of salt, strain, and serve.

LEMON ALBUMEN

White of 1 egg
1 tablespoon lemon juice
Chipped ice
⅓ glass water

Put the white of the egg and a little chipped ice into a glass. Beat slightly with a fork, to break and coagulate the egg. Add lemon juice and water, mix well, and serve.

ALBUMENIZED MILK

1 cup cold milk
White of 1 egg
½ teaspoon sugar
A sprinkle of salt
Vanilla flavor

Whip the white of egg slightly with a silver fork, add the milk and other ingredients, mix well, strain into a glass, and serve.

JUNKET

1 pint milk about 100° F. — A sprinkle of sugar
½ junket tablet — 1 teaspoon cold water
Vanilla flavor to taste

Dissolve the tablet in the cold water, mix all the ingredients, and let stand in a warm place until set.

LEMONADE

2 tablespoons lemon juice — 1 tablespoon sugar
¾ cup water

Mix the lemon juice and the sugar, add cold water, strain, and serve.

EGG LEMONADE

1 egg — 2 tablespoons lemon juice
¾ cup cold water — 1½ tablespoons sugar
A sprinkle of salt

Beat the egg thoroughly, add sugar, salt, and lemon juice, and mix. Add the water gradually, stirring constantly. Strain and serve.

ORANGE ALBUMEN

⅓ cup orange juice — ¼ cup crushed ice
½ tablespoon sugar — White of 1 egg
A few grains of salt

Beat the white of egg with a silver fork, add orange juice, salt, and sugar, and strain over the crushed ice.

LEMON WHEY

1 cup milk — ¼ cup lemon juice

Add lemon juice to milk, and mix. Let stand 10 minutes, or until it curdles. Strain through cloth, and serve.

CREAM EGGNOG

1 egg separated — A sprinkle of sugar
½ cup thin cream — 4 or 5 drops of vanilla flavor

Beat the yolk until light-colored and foamy. Beat the white stiff. Add the sugar, the vanilla, and a speck of salt to the beaten yolk. Then mix in the cream, and fold into the beaten white of the egg, reserving a spoonful of white for the top of the glass.

FRUIT EGGNOG

⅓ cup grape juice or prune juice — 1 egg separated
A sprinkle of sugar if needed

Beat the egg the same as for cream eggnog. Add the fruit juice to the beaten yolk, and sugar if needed, and mix well. Fold into the stiffly beaten white of egg, and serve the same as cream eggnog. A tablespoon of rich cream added to the beaten yolk will add to the palatability and also to the caloric value of fruit eggnog.

ORANGE EGGNOG

⅓ cup orange juice — 1 tablespoon rich cream
1 teaspoon sugar — 1 egg separated

Beat the yolk the same as for cream eggnog. Add the cream and the sugar, and beat; then add the orange juice, fold into the stiffly beaten white of egg, and serve the same as cream eggnog.

DRY EGGNOG

1 egg separated — 1 tablespoon blackberry juice
2 teaspoons rich cream — or sweetened lemon juice
A sprinkle of salt

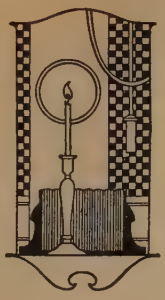
Beat the yolk the same as for cream eggnog. Add the cream, and beat; then mix in the sweetened fruit juice, fold into the beaten white of egg, and serve.

BAKED BANANA No. 1

Select firm, not overripe bananas, put them into a hot oven without removing the skins, and bake until the skin is dark and they begin to burst. Serve at once.

BAKED BANANA No. 2

Remove the skins from firm bananas, lay in an oiled baking pan, and pour over them nearly enough lemon sauce (page 160) to cover them. Bake until tender and slightly browned. Water and lemon juice may be used in the place of lemon sauce, but are not quite so good.



XXII. DIET IN DISEASE

By Dr. Lavina Herzer
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"Dainty and appetizing food for the sick."

The diet prescribed for patients who are very ill, is usually altogether liquid, such as fruit juices, milk, gruels, broths, eggnogs, and ices and ice cream; while a less rigid diet, known as "light diet," or convalescent diet, consists of such nutritious and easily digested foods as soft cooked eggs, cream toast, flakes and cream, oatmeal and cream, broths, etc.

There is no specific food cure. We can only give such foods as will furnish Nature with proper materials for building up the body resistance, and withhold such substances as would hinder her in her work. In nearly all cases of illness, the individual is less active, the digestion suffers more or less, and the appetite is poor. For this reason, all foods should be simple and easily digested. "Special diet" includes certain dietary formulas suitable in particular diseases in the treatment of which diet plays a very important part. A few of these are given in the following lists:

Acute infectious diseases: influenza, measles, pneumonia, mumps, whooping cough, scarlet fever, typhoid fever
Gastric disorders: low acidity, high acidity, ulcer of the stomach, carcinoma (cancer) of the stomach
Intestinal disorders: constipation, colitis (chronic), diarrhea
Tuberculosis
Diabetes
Nephritis
Anæmia

DIET IN THE ACUTE INFECTIOUS DISEASES

In the acute infectious diseases of short duration, a strictly liquid diet is usually indicated if there is fever present.

Influenza.— During the height of the fever, use a liquid diet; and as the fever abates, gradually add some of the soft foods, such

as cream toast, well cooked cereal and milk or cream, soft cooked eggs, flakes and cream, etc. The diet during convalescence should be very nutritious and easily digested, so that strength may be regained as rapidly as possible.

Measles.— The dietetic treatment for measles is similar to that for influenza.

Pneumonia.— Cold liquids in abundance aid in lowering the temperature and increase elimination. Avoid effervescent drinks. During convalescence, a very nourishing diet is indicated.

Mumps.— Liquid or semiliquid of bland foods. Avoid acids. Anæmia is likely to follow, hence the articles listed as high in iron should be added as soon as possible.

Whooping Cough.— There is always a great loss of weight, due partially to vomiting. Always replace a meal lost soon after it is taken. Give nourishing, easily digested foods listed under semisolid diet.

Scarlet Fever.— Give plenty of cold liquids. Milk is the stand-by in these cases. It may be modified by cereal water, lime-water, or infant foods. Children seldom tire of it. Fruit juices and lemonade are used also. The most dreaded complication is inflammation of the kidneys, which may develop late in convalescence. Therefore it is very important to keep the child on a bland diet throughout the course of the disease. Especially avoid proteins, as eggs, meat, meat broths, etc. Use salt sparingly, and gradually return to a normal diet.

Typhoid Fever.— Typhoid fever is caused by the entrance of the bacillus typhosus into the intestinal tract. The disease is largely spread by filth, flies, food, and fingers. Very careful disinfection and screening should be practiced in all cases, in order to avoid spreading the disease. All food left uneaten by the patient should be burned or buried. The dishes should be kept separate, and boiled for five minutes after each meal.

In this condition, there is an increased expenditure of energy, due to the presence of bacteria in the intestines. For this reason, the typhoid patient will require as much food as if doing a moderate amount of muscular work. The tendency at the present

time is away from the starvation diet formerly practiced. The leading authorities advocate giving the patient as much easily digested food as he can properly assimilate. This will vary with the condition of the patient.

If the appetite can be fostered, a great deal is gained. Variety in the meals and in the manner of serving, also proper attention to keeping the teeth and the mouth in a cleanly condition, will aid in this matter. Carefully avoid overfeeding, which may cause indigestion and defeat its own end.

In giving a *liquid diet,* feed every two or three hours during the day, and every four hours during the night, unless otherwise instructed. The following is a partial list of foods included:

LIQUID DIET

Milk boiled, cold, hot, malted, skimmed, or pancreatized, buttermilk, yogurt, whey
Milk modified by adding water, limewater, mineral waters, cream, cereal coffee, infant foods
Gruels from all cereals (well strained)
Soups (well strained)
Albumen water
Eggnogs
Broths
Fruit juices
Ice cream (little sugar)
Fruit ices
Malted nuts
Meltose
Lactose for sweetening drinks

Diastase may be used to digest partially the starch in gruels. The caloric value of liquid foods may be increased by the addition of cream, white of egg, or whole egg.

SOFT, SEMISOLID, OR SEMILIQUID DIET

Toast, softened in milk or soup
Eggs, soft cooked or raw
Breakfast cereals, well cooked, and strained unless very fine
Soups (strained)
Baked and mashed potato
Junket
Gelatin
Custards
Apple sauce
Baked banana
Prune *purée*
Blancmange
Cereal and milk puddings

DIET IN GASTRIC DISORDERS

A few simple suggestions that apply in all cases of digestive disturbances follow:

1. Food should be thoroughly masticated.
2. Meals should be taken at regular intervals, in moderate quantities.

3. No food whatever should be taken between meals.
4. The food should be fairly concentrated.
5. Meals should not be taken when the patient is fatigued.
6. Avoid a large variety at one meal. Use no more than three or four articles at a meal. Get a variety at different meals.
7. Drink fluid one hour before or three hours after meals.
8. Take daily systematic exercise in the open air.
9. Take a daily bath. Keep the bowels open.
10. Use reason in choosing your food, and *then forget about it.*
11. Avoid worry.

ARTICLES TO BE AVOIDED IN ALL CASES

1. Rich soups, gravies, and sauces
2. Strong condiments
3. Fresh soft breads of all kinds
4. Griddlecakes
5. Pastry of all kinds
6. All jams, jellies, sweet puddings, and candies
7. Sugar in all forms, especially with milk
8. Raw vegetables, except the finer ones
9. All coarse, heavy vegetables, as beans, sweet potatoes, boiled turnip, cabbage, etc.
10. Large amounts of fat
11. Game of all kinds
12. All smoked or canned meats, shellfish, etc.
13. Stews, hash, etc.
14. Cheese of all kinds, except cottage cheese
15. Very acid or very sweet fruits, also dried fruits and nuts
16. Tea, coffee, cider, chocolate, and tobacco

Low Acidity.— The meals should be separated sufficiently that the stomach may empty itself and have time for rest. The diet should not be too bland, as that would fail to stimulate gastric secretion. It may be best to begin with partially predigested foods, as malted foods, pancreatized milk, dextrinized cereals, etc. The following foods are adapted to these cases:

Stale whole wheat bread, toast, zwieback, crackers, etc.
The finer vegetables, as squash, tomato, etc., also vegetable *purées*
Fats in small amounts, as cream, butter, olives, olive oil, etc.
Eggs simply cooked without fat
Fruits cooked or raw, especially oranges, lemons, and grapefruit
Buttermilk, yogurt, cottage cheese, skimmed milk
Desserts, the simplest only

The presence of protein food in the stomach tends to stimulate gastric secretion. Avoid drinking at meals, as that dilutes the gastric juice. Avoid all fresh breads and rich fatty foods.

High Acidity.— Use proteins in normal amounts. Increase the fats. Use salt sparingly. Avoid all highly seasoned savory foods. Use a diet similar to the one recommended for ulcer of the stomach.

Ulcer of the Stomach.— Milk is one of the best foods for this condition. In some instances, it may need to be diluted. Fresh sweet buttermilk, ice cream (with very little sugar), cottage cheese, butter, olive oil, etc., are excellent. The following also are suitable:

The fine cereals well cooked
Any of the prepared cereals, as granose flakes, puffed wheat, etc.
Gruels
Browned rice
Granose and rice biscuit
Stale white bread
White zwieback
Infant foods
Milk soups (strained)
Purée of peas, spinach, corn, and squash
Milk-cereal puddings, plain custard, prune whip, date whip, cream eggnog
Mild fruits and fruit *purées*

Avoid condiments, savory dishes, sweets, acid fruits, raw fruits, all coarse foods, worry, excitement, fatigue.

The latter precautions are especially important in this condition. Rest before and after each meal is helpful if the rest cure cannot be taken.

Carcinoma (Cancer) of the Stomach.— The food should be concentrated, non-irritating, and in an easily digestible form. Milk in any form is a very important article of diet. Cereal may be cooked in milk; or toast soaked in milk may be used. Sour milk, or one of the artificial preparations, as yogurt, is recommended by authorities on the subject, as it forms a smaller curd in the intestines. In severe cases, milk may be predigested. The bread used should be stale or toasted. Vegetables are best in the form of *purées.* Fats should be given sparingly. Eggs may be used soft cooked or raw. Only the bland fruits should be taken, as pears, baked sweet apple, prune *purée,* etc. Plain puddings may be used; also ice cream.

Avoid condiments, sweets, fried foods, pastry, all rich fatty foods, all irritating foods, acid fruits and vegetables, large amounts of fat.

In all the late stages, the patient's appetite may as well be gratified, as far as possible. Rectal feeding may give relief when the stomach refuses to digest the food.

DIET IN INTESTINAL DISORDERS

The disorders considered under this heading are not really diseases, but symptoms resulting from various conditions. Nevertheless, because of the frequency with which they occur, and the important part played by a proper diet, they are included in this chapter.

Constipation.— There are many causes of constipation, some of them having little reference to diet; but many cases are closely related to the amount and kind of food ingested. Some of the most common causes that ought to be mentioned are:

1. The use of too concentrated diet, which includes the use of refined and demineralized cereal products, flesh foods, etc.
2. Irregularity in meals.
3. Insufficient fats.
4. Insufficient amount of food.
5. Hurry, worry, and strain.
6. Neglect to answer nature's call.

Other rational treatment should be employed, such as exercise, bathing, etc., besides a laxative diet. Some foods that will aid in increasing peristaltic action of the intestines are:

All whole meal cereals
All whole meal breads
Bran, and bran preparations
Raw vegetable salads
Nuts
Agar-agar, plain or in fruit gelatin
Honey
Ripe olives
Olive oil
Cream
Yogurt
Buttermilk
Butter
Molasses

All fruits, both fresh and cooked, are excellent, especially prunes, figs, and dates; also cooked vegetables, preferably onions, corn, and spinach.

Colitis, Chronic.— The principal symptoms of chronic colitis are gas on the bowels, mucus in the stool, nervous depression, and frequently abdominal pain. The gas and the mucus are the results

of irritation of the mucous membrane, which is aggravated by the use of certain foods, as berries, because their seeds are sharp; coarse vegetables, because of the large amount of cellulose; the skins of fruits, for the same reason; acids, etc.

The first step in the treatment, therefore, would be to avoid any foods that would irritate the intestinal tract. The following is a list of foods that usually give trouble under these conditions:

Fruits, especially raw	Coarse vegetables, especially raw
Acids	Cooked vegetables, as potatoes,
Nuts	turnips, beets, etc.
Sweets	Oatmeal

All coarse cereals

A browned flour gruel made with milk, or cream toast, to begin with, will relieve an inflamed intestinal tract, with the accompanying gas. In a large number of cases, very good results have been secured by the use of well cooked prunes, or prune pulp, served with rich cream. The fat of the cream serves to neutralize any acid contained in this mild fruit; and with the cessation of gas, the unpleasant symptoms readily disappear. Additional foods that may be used are corn flakes and cream, browned rice with cream, cream soups, stale bread, etc. As the symptoms pass away, return gradually to a normal diet.

Diarrhea.— If the condition is at all severe, the patient should be put to bed. Avoid all laxative foods. In mild cases, the following foods may be used:

Gruels well strained	Macaroni
Milk or cream toast	Milk and cereal puddings
Soft cooked eggs	Custards
Cream soups	Blancmange

Dry toast, zwieback, crackers, and stale bread of fine flour

Avoid all fruits, vegetables, fried foods, and sweets. In severe cases, use the following:

Browned flour gruel	Blackberry juice
White flour gruel	Raw egg albumen
Boiled milk	Pancreatized milk

DIET IN TUBERCULOSIS

In tuberculosis, there is a great drain on the patient's strength, and proper feeding and sanitary surroundings are very important factors in the cure. The old practice of "stuffing" the tubercular patient is no longer followed. Three nourishing meals a day are usually sufficient. But if the appetite is poor, and little is eaten, a glass of milk or an eggnog may be given at prescribed intervals between meals. These patients, as a rule, bear an increase in fats well. The amount of protein and mineral salts should be increased.

The heaviest meal should be taken while the temperature is nearest normal. Special care should be exercised to make the meals tempting and attractive in these cases, as the appetite is often poor. The patient should strictly avoid swallowing his sputum, for he may reinfect himself in this way. Fatigue should be avoided.

Foods High in Protein

Milk
Cottage cheese
Eggs
Peas, beans, lentils
Almonds
Malted nuts
Entire wheat bread
Cracked wheat
Oatmeal
Macaroni
Spaghetti

Foods High in Fats

Cream
Egg yolk
Ripe olives
Walnuts
Butter
Olive oil
Solid vegetable fats

DIET IN DIABETES MELLITUS

In the treatment of diabetes mellitus, proper regulation of the diet is by far the most important consideration. The patient should by all means consult a physician and obtain instructions from him. These few suggestions are simply as an aid in following out these instructions.

After the body has once lost its power to care properly for starches and sugars, it never completely regains that power; hence the patient must constantly observe caution in his diet and his habits of life. With proper care, many cases can live fairly comfortably. If the carbohydrates are too much restricted, leaving proteins and fats as the chief constituents of the diet, a condition

of acidosis is likely to develop. To prevent this complication, and to build up the patient's tolerance for starches and sugars, is the aim of the dietitian. These patients should avoid *worry, fatigue, chilling, indulgence in forbidden foods.*

In this condition, the body is unable to oxidize, or burn up, the sugars properly. These accumulate in the blood up to a certain point, and afterwards they are excreted in the urine. The presence of a high percentage of sugar in the tissues lowers the resistance to disease. The urine should be examined regularly, and the weight of the patient taken.

In beginning treatment of these cases, their tolerance for starch and sugar is tested as follows: The individual is starved until the urine is sugar free; then foods low in carbohydrate, preferably green vegetables, are given until sugar again appears. This is the point of tolerance, and the diet is arranged to contain carbohydrates within this limit, although the tolerance may often be increased in time. Anything above this amount is poison to the body.

It is well, in almost all cases, to plan for at least one "green day" each week. On these days, only the vegetables in the 5% list are served, with salad dressing, and perhaps an egg, black cereal coffee, lemonade, etc. As a sweetening agent, saccharine or sweetina or other similar preparations may be used. As they are products of coal tar, and very concentrated, great care must be taken not to use them too freely, or the digestion will be upset and the appetite spoiled. In some of the milder cases, it is permissible to allow a small amount of carbohydrate food, as bread, potato, oatmeal, etc.; while in others, it may be best to use breads prepared from gluten flour, soy bean meal, almond meal, etc. The attending physician's advice should be followed in each case.

DIABETIC FOOD TABLE

In order to determine the per cent of carbohydrate a patient is receiving, the foods are arranged into groups on the basis of the amount of carbohydrate they contain; and if it is desired to substitute one food for another, all that is necessary is to consult the food table. The following table[1] (minus a very small assort-

[1] "Diabetic Manual," by Joslin.

ment of meat and fish included in the original), which has been used by well-known authorities on the subject, is most convenient.

FOODS ARRANGED APPROXIMATELY ACCORDING TO CONTENT OF CARBOHYDRATE

Vegetables (fresh or canned)

5 per cent[2]		*10 per cent*[2]	*15 per cent*	*20 per cent*
Lettuce	Tomatoes	String beans	Green peas	Potatoes
Cucumbers	Brussels sprouts	Pumpkin	Artichokes	Shell beans
Spinach	Water cress	Turnip	Parsnips	Baked beans
Asparagus	Sea kale	Kohl-rabi	Lima beans, canned	Green corn
Rhubarb	Okra	Squash		Boiled rice
Endive	Cauliflower	Beets		Boiled macaroni
Marrow	Eggplant	Carrots		
Sorrel	Cabbage	Onions		
Sauerkraut	Radishes	Green peas, canned		
Beet greens	Leeks			
Dandelion greens	String beans, canned			
Celery	Broccoli			
Mushrooms	Artichokes, canned			
Swiss chard				

Fruits

Ripe olives (20 per cent fat)	Watermelon	Raspberries	Plums
Grapefruit	Strawberries	Currants	Bananas
	Lemons	Apricots	Prunes
	Cranberries	Pears	
	Peaches	Apples	
	Pineapple	Huckleberries	
	Blackberries	Blueberries	
	Gooseberries	Cherries	
	Oranges		

Nuts

Butternuts	Brazil nuts	Almonds	Peanuts
Pignolias	Black walnuts	Walnuts (English)	*40 per cent*
	Hickory nuts	Beechnuts	
	Pecans	Pistachios	Chestnuts
	Filberts	Pine nuts	

Other foods allowed are eggs, milk, cream, yogurt, buttermilk, cottage cheese, olive oil, salad oil, cereal coffee; bran bread made without flour; bread, sticks, and noodles, made with gluten flour; soy bean and almond meal; lemonade, plain, or sweetened with sugar substitute (coal tar preparations); and occasionally potato.

[2] Reckon the average carbohydrates in a mixture of vegetables of the 5 per cent group as 3 per cent; of the 10 per cent group as 6 per cent.

DIET IN NEPHRITIS

In this condition, there is difficulty in getting rid of the waste products, especially the nitrogenous waste. We therefore seek to provide a diet that will not overburden the eliminative organs. In acute cases, a milk or milk and cereal water diet is indicated. As the symptoms subside, other bland foods may be constantly added. In chronic cases, the following list of foods may be useful:

Milk soups	Flakes	Potato
Milk gruels	Tapioca	Onion
Buttermilk	Junket	Cauliflower
Yogurt	Macaroni	Lettuce
Cream	Stale bread	Spinach
Malted milk	Toast	Celery
Butter	Crackers	Water cress
Olive oil	All cereals well cooked, except oats	Vegetable gelatin

DIET IN ANÆMIA (Secondary)

Anæmia may follow any prolonged illness, or hemorrhage, and may be present in many of the chronic diseases. In the ordinary case of secondary anæmia, the blood is deficient in corpuscles, coloring matter, and other constituents. Because of the poor blood supplied, the digestive juices are weak and scant. Constipation often complicates, and should receive prompt attention, as the removal of waste products is especially important. Plenty of fresh air, sunshine, and sleep are very essential factors. The following is a list of foods that are rich in mineral and blood-building elements. The foods given are especially rich in iron, and are arranged in order, beginning with those highest in this mineral.

FOODS HIGH IN IRON

(Compiled from Various Sources)

Spinach	Bran	Lettuce
Dandelion greens	Beans, dried	Carrots
Swiss chard	Peas, dried	Beets
Water cress	Entire wheat	Onions
Tomato	Almonds	Bananas
String beans	Oatmeal	Celery
Cabbage	Prunes, dried	Potato
Strawberries	Raisins	Apples
Egg yolk	Sweet corn	Oranges

XXIII.

FRUIT ICES, ICE CREAM, SHERBETS

"Youth perpetual dwells in fountains,
Not in flasks, and casks, and cellars."

Fruit ices and ice cream are often recommended by physicians for particular cases. The following suggestions on the use of ices and ice cream, by a physician of long practical experience, will be a help to the nurse or the mother:

"Fruit ice is a very useful article of food for those who are suffering with a gastritis where there is an absence of hydrochloric acid. It has the effect of reducing the inflammatory condition, and at the same time supplies the patient with nutrition. It is not a good plan to take fruit ice in connection with a large meal, as it lowers the temperature of the stomach, and the latter cannot perform its functions until it has reached its normal temperature again.

"Ice cream is a useful article of food for a person who is suffering with gastric ulcer and inflammation of the stomach, due to excess of hydrochloric acid, as it is both nutritious and cooling to the stomach.

"The combination of sugar and milk does not seem to do any particular damage under these conditions, for the large amount of hydrochloric acid seems to neutralize any evil effects. The materials used should be of the best quality, for frequently we have severe ptomaine poisoning from eating an inferior quality of ice cream."

LEMON ICE

½ cup lemon juice — 1 cup water
Scant ½ cup sugar

Boil the water and the sugar together for a few minutes, remove from the fire, add the lemon juice, cool, strain, and freeze. Use about 3 parts of crushed ice to 1 part of salt, as too much salt makes a coarse-grained ice. The beaten white of an egg may be added after the ice is partly frozen, if desired, and then the freezing continued until the mixture is firm.

GRAPEFRUIT ICE

⅔ cup grapefruit juice
1 cup water
About ½ cup sugar

Prepare and freeze the same as lemon ice.

STRAWBERRY ICE

1 box ripe strawberries
Juice of 1 orange
Juice of 1 lemon
1 cup sugar
1 cup water

Wash and stem the strawberries, and crush in a bowl with the sugar. Let stand 1 hour; then add the fruit juices and the water, and mix well. Strain and freeze the same as for lemon ice.

STRAWBERRY SHERBET

Prepare the fruit and the juices the same as for strawberry ice, and put directly into the freezer without straining. Freeze until partly stiff; then add the white of an egg, or a beaten whole egg, and continue to freeze until firm.

ORANGE ICE

1 cup orange juice
1 egg
1 cup sugar
2 cups water
2 tablespoons lemon juice

Beat the egg slightly, add the rest of the ingredients, and freeze.

APRICOT ICE

1 cup stewed apricot pulp
3 tablespoons lemon juice
½ cup water
Sugar to taste

Stew the apricots with enough sugar to sweeten. When cool, mash through a fine colander, add lemon juice and water, and freeze. A little additional sugar may be required.

APRICOT SHERBET

Double the proportions in the above recipe, and when partly frozen, add the white of an egg, or a beaten whole egg, and continue to freeze until firm. When in season, use fresh apricots, pared, mashed fine, and sweetened to taste, in the place of the cooked fruit.

PEACH SHERBET

To 2 cups of peach pulp (preferably fresh) add the juice of 2 oranges and 1 lemon, 1 scant cup sugar, ½ cup water, and 1 egg white or a beaten whole egg. Mix, and freeze the same as for apricot sherbet.

GRAPE SHERBET

2 cups grape juice
3 tablespoons lemon juice
⅓ cup sugar or honey
1 cup cream

Blend the juices and the sugar or honey, and turn into the freezer. When partly frozen, add the cream, and continue freezing until firm. 1 slightly beaten egg may be used in the place of the cream, when cream is unobtainable.

ICE CREAM No. 1

1 cup cream
1 cup milk
½ teaspoon vanilla flavor

Use a minimum of sugar or honey for sweetening, and freeze the same as for sherbet.

ICE CREAM No. 2

2 cups hot milk
1 tablespoon flour
⅓ cup sugar or honey
1 egg
A sprinkle of salt
2 cups thin cream
1 teaspoon vanilla flavor

Mix the sugar and the flour together, add a sprinkle of salt and the egg slightly beaten, and blend well. Add the hot milk gradually, stirring as it is being added, and continue to stir over the fire until the egg is cooked, but do not boil. Remove from the fire, and let cool. Add the cold cream and the flavoring, strain, and freeze.

XXIV. PRINCIPLES OF CANNING AND PRESERVING

"And nature does require her times of preservation, which perforce I . . . must give my tendance to."

All kinds of fruit and most vegetables can be preserved in cans or in glass jars by methods easily applied in the home. During the past few years, much experimental work has been carried on by worthy organizations and clubs, in an effort to perfect an all-round, satisfactory home-canning method,— one that is simple to understand, easy to follow, and does not require expensive equipment to make it successful. So far there are three methods being used, and the good points as well as the weak points in each become manifest as we study them.

1. The *hot-pack* or open-kettle method, cooking in a kettle the foods to be canned, either in their own juice or in a sirup, then sealing them in sterilized jars. This method is successful for acid fruits and acid vegetables, but will not do for non-acid products, such as corn, peas, beans, etc. It is also difficult to retain the shape and color of the products canned in this way.

2. The *three-day* intermittent method has also been used in canning vegetables. It consists in packing the uncooked products in sterilized jars, filling the jars with water or sirup, putting the lids in place, placing the jars on a rack in a boiler, filling the boiler with water to cover the tops of the jars, and letting the water boil around the jars for 1 hour. The jars are then set aside for 24 hours. The next day, they are placed back in the vessel, and cooked in boiling water for 1 hour again. They are then set aside for 24 hours more, and the cooking is repeated the third day, which completes the process. The first boiling destroys the bac-

teria, but not the spores, or seeds. As soon as the jars cool, these spores germinate; and the boiling on the second day kills this crop of bacteria before they have had time to develop spores. Boiling on the third day is not always necessary, but is a prevention against possible growths.

While the theory back of this method is absolutely correct, so far as the keeping qualities of the food are concerned, the three days' cooking is too much cooking for many foods, as it destroys both the color and the flavor. Moreover, it is a long and tedious work; and in the use of glass jars, the prolonged cooking weakens the seal. While the above method is a sure one, especially when sealed tins are used, the same results may be obtained by a much quicker method, and with keeping qualities fully as good.

3. The *cold-pack* method seems to have overcome all the objections in the foregoing methods, besides presenting new and tried theories. This method simply consists in packing uncooked foods in jars, then cooking them in the closed jars for a given length of time, figured out as best suited to each food. All foods do not need to be and should not be cooked the same length of time, and herein is where the cold-pack method is most successful. Foods are sterilized, and their flavor and color best retained, when definite time-tables are followed, which have been developed after much experimenting. In carrying out the cold-pack method, the procedure is made easy by observance of the following six steps:

1. *Preparation.*— The materials are cleaned, pitted, peeled, or sliced, to make them more attractive, and to avoid preserving useless material.

2. *Blanching.*— This means to parboil, or scald a given length of time, which varies from 1 to 15 minutes, depending on the kind of product. For berries and soft fruits, the blanching is omitted. After washing the fruit or vegetables in cold water, as if to cook and serve, put into a cloth bag, and drop into boiling water for the required length of time, counting the time after boiling begins.

3. *Cold Dip.*— Lift the bag of vegetables or fruit from the boiling water, and immediately plunge into cold water, lift, and

drain. This cold dip sets the color and shrinks the food after it has been in the boiling water.

4. *Packing.*— The product is then immediately packed in hot jars. In the case of fruits, hot sirup or hot water is added. In the case of vegetables (except tomatoes), hot water is added, with salt in the proportion of 1 level teaspoon to each quart jar of food. The sterilized rubbers and tops are then put in place. If using the "composition sealing lid," secure with screw band, or clamp. If using screw top jars with rubber ring, seal only partially, *using the thumb and the little finger* only. This makes it possible for the steam gendered within the jar to escape, and prevents breakage.

5. *Hot-Water Bath.*— In a vessel containing boiling water in which the jars have been sterilized, a false bottom is placed. Upon this the jars are set to keep them from resting flat on the bottom of the boiler, and thus the water is allowed to circulate under them. Wooden laths, wire, or wire netting will answer the purpose.

6. *Processing.*— Place the jars on the rack in the boiler. Fill with warm water to cover the tops of the jars by at least 1 inch. This will prevent any liquid from being lost during the cooking, as it is likely to be if the water does not cover the tops of the jars, or if the covers are adjusted too loosely. The time is counted from the moment the water boils up well. As soon as the time is up, the water is lowered by dipping out a portion, the jars are removed, and the covers are tightened. When using jars with sealing composition tops, secure the lids with screw bands or clamps before putting them into the water; and when the processing is completed, set the jars aside, and the cooling of the jars seals them. Jars with rubber rings and screw tops, being only partially sealed while in the water bath, are sealed tightly when removed from the boiling water, and inverted to test the seal.

The following time-table for the blanching and sterilizing of some of the more common foods is adapted from the "Home Canning Manual," 1918, published by the National War Garden Commission, Washington, D. C. The time given for cooking is for quart jars. For pint jars, deduct 5 minutes. For 2-quart jars, add 30 minutes. The time given is also calculated for fresh,

sound, and firm vegetables or fruit. For vegetables that have been gathered over 24 hours, increase the time of sterilization by adding one fifth.

TIME-TABLE FOR BLANCHING AND STERILIZING

	Blanching	Hot-Water	Water-Seal	Steam Pressure in Pounds	
				5 to 10	10 to 15
Vegetables	Minutes	Minutes	Minutes	Minutes	Minutes
Sweet Corn	5 to 10	180	120	90	60
Green Peas	5 to 10	180	120	60	40
Lima Beans	5 to 10	180	120	60	40
String Beans	5 to 10	120	90	60	40
Okra	5 to 10	120	90	60	40
Greens	15	120	90	60	40
Pumpkin	See recipe	120	90	60	40
Tomatoes	to loosen the skins	22	18	15	10
Fruits					
Apples	1½	20	12	8	
Pears	1½	20	12	8	
Quinces	1½	20	12	8	
Apricots	1 to 2	16	12	10	
Peaches		16	12	10	
Plums		16	12	10	
Berries		16	12	10	
Fruits without sugar		30	20	12	

VEGETABLES

STRING BEANS No. 1

Break, remove the strings, blanch, cold dip, drain, and pack into hot glass jars or tin cans. Add boiling water to fill the container, and 1 teaspoon salt to the quart jar. Adjust the rubber rings, and screw on the caps with the thumb and the little finger. Seal tin cans completely. Cook for the length of time given above for the particular kind of cooker used.

Note.— With the addition of a little wholesome acid, such as lemon juice, string beans may be canned much the same as fruit.

An example is given in the following recipe for string beans. Other vegetables may be canned in like manner (if the taste of acid is not objectionable), except corn, which requires half again as much lemon juice as do string beans.

STRING BEANS No. 2

Prepare the string beans as in the preceding recipe. Add boiling water in a saucepan barely to cover the beans, with salt to taste. Cover (except the cover must be drawn to one side far enough to allow the steam to escape), and let boil continuously for 30 or 35 minutes. Lift a glass jar out of boiling water, and put on a hot scalded rubber ring. Into each quart jar put 2 tablespoons lemon juice, and fill the jar with boiling beans. Add enough of the boiling liquid to overflow the jar; then screw the cap on tightly, invert, and let cool.

SWEET CORN

Remove the husk and the silk, blanch, dip, drain, and cut from the cob. Pack immediately into jars or tin cans, to within ½ inch of the top. Add a teaspoon of salt to the quart, and fill with boiling water. Put on the rubber rings, and screw the caps on with the thumb and the little finger. (Seal tin cans completely.) Cook for the length of time given in the table, for the particular kind of cooker used.

PUMPKIN, WINTER SQUASH, ETC.

Break open, and remove the seeds and the stringy fiber. Peel, cut into small pieces, and boil until thick. Pack into jars, and sterilize for the length of time given for the particular kind of cooker used.

TOMATOES

Blanch, dip, drain, and remove the skins and the hard part near the stem end. Cut into halves or quarters, and pack into jars or tin cans, with a teaspoon of salt to each quart. Put on rubber rings, and adjust the caps the same as for corn. (Seal tin cans completely.) Cook for the length of time given for the particular kind of cooker used.

TOMATOES (Hot Pack)

Prepare the tomatoes the same as in the preceding recipe, and place in an open kettle. Bring gradually to the boiling point, and let simmer until thoroughly cooked through. Have the jars and the caps sterilized. Lift them one at a time out of boiling water, adjust the rubber, and fill with boiling tomato. Put on the cap, and screw down tightly, being careful not to touch the inner part of jar, rubber, or jar cap with the fingers in handling. Invert and let cool.

PRESERVATION IN SALT

Vegetables can be preserved more cheaply than in cans or jars, and more simply for household use than by drying. The method makes use of the preservative qualities of salt. The following formula is given out by the Division of Viticulture, College of Agriculture, Berkeley, California:

"The vegetables are first washed and sliced. Weigh them, and take 1 pound of salt for each 2 pounds of prepared vegetables. A layer of salt is first placed on the bottom of the crock or barrel, and then a layer of vegetables. Similar layers are alternated until the vessel is full, finishing with a layer of salt. A wooden cover is then applied, and weighted with a stone or similar object that will not be acted upon by the brine. After a few days, there will be a considerable shrinkage in volume, and the vessel can be filled with more layers, and weighted as before. These methods are suitable for most root vegetables, string beans, cabbage, and cucumbers. The large quantities of salt used in these methods must be removed by soaking before the vegetables can be eaten."

PRESERVATION OF EGGS

(Water-Glass Method)

Eggs may be kept from 8 to 10 months, at small expense, by the use of water glass; and a little timely effort in this respect may prove of great value when the price of eggs is prohibitive. For success in preserving eggs by water glass, a little caution on the following points is positively necessary:

The eggs must be absolutely fresh, preferably not more than 2 days old. (Infertile eggs are the best.) The shells must be clean, and free from the smallest crack. Clean crocks are the best containers, and preferably not over 2 or 3 gallons for family use, as the eggs at the bottom of a large crock are liable to crack, and they will be used last.

Water glass is a pale, yellow, odorless, sirupy liquid, and is known to the chemist as silicate. Use 1 part silicate to 9 parts water distilled, or boiled and cooled. Mix well. Fill the crock half full of the liquid, and place the eggs in it carefully, so as to avoid cracking the shells. The eggs may be added a few at a time, if desired, until the container is about full. The liquid should extend constantly 2 inches above the eggs in the container. Cover the crock, and set in a cool, dark place. If the liquid evaporates, it should be replaced with boiled and cooled water.

For use, rinse in cold water, and use immediately. For boiling purposes, they are good for at least 6 months, and should first have a tiny hole pricked in the large end, to obviate cracking, as the pores of the shell are sealed tight from the silicate. After 7 months, the white becomes thinner, and the yolk membrane more delicate. Nevertheless they are good for cakes, custards, scrambled eggs, and for cooking purposes generally, up to 10 or 12 months.

FRUITS

Fruits are usually slightly acid, and in general, do not support bacterial growth. Thus canned fruits are more commonly fermented by yeasts, if improperly sterilized. The yeast plant is destroyed by heat at less than boiling temperature; hence the destruction of bacteria may be left out of consideration in the canning of fruits.

Fruit should not be subjected to long cooking, but should be cooked only long enough to insure its preservation. A large quantity of sugar spoils the flavor of the fruit, and is likely to make it less easily digested.

SELECTION OF FRUIT

The selection of fruit is one of the first steps toward successful canning. The flavor is not developed until the fruit is fully ripe; but the fruit is at its best for canning and for jelly making just before it is perfectly ripe. In all the soft fruits, the fermentative stage follows closely upon the perfectly ripe stage. Therefore underripe fruit is better than overripe, for canning purposes. This is especially important in jelly making, for the reason that in the overripe fruit, the pectin begins to lose its jelly-making quality. The fruit should be carefully sorted; perfectly ripe fruit and unripe fruit should not be cooked in the same jar.

SIRUPS

The quantity of sugar that should be used will vary with the kind of fruit, and somewhat with the locality in which it is grown. The following may be taken as an average; more or less sugar may be used as the case may require.

Apricots,	2 to 2½	quarts	water to 1	quart sugar
Peaches,	2½ to 3	quarts	water to 1	quart sugar
Pears,	3 to 4	quarts	water to 1	quart sugar
Plums,	1 to 1½	quarts	water to 1	quart sugar

STERILIZING THE FRUIT

Prepare the fruit by paring and coring, and blanching such fruits as require blanching, and pack in hot glass jars. Fill with hot sirup, care being exercised so as not to break the jars. Put on the scalded rubber rings, and screw the tops on with the thumb and the little finger. Set the jars on the false bottom of the boiler (water bath), and add water about the same temperature as the jars, to cover them about 1 inch. Bring gradually to a boil, and cook for the length of time given in the table, for the particular kind of cooker used.

Let soft fruits that have not been blanched before being packed into the jars, stand for half an hour after being filled with hot sirup, before cooking, in order that the fruit may absorb water, and they will not break down so easily in the cooking, but will more nearly resemble fresh fruit.

ABOUT BERRIES

Berries are a very delicate fruit, and break down very easily when canned by the cold-pack method, and because of this, are generally cooked in the open kettle. For each quart of berries, use 1 cup of granulated sugar. Put a layer of berries into a granite dish, sprinkle with sugar, cover with another layer of berries, and so on. If extra juice is desired on the fruit, a little water may be added. Let the berries and sugar stand in a cool place for several hours; then drain off the juice, and bring to a boil. Pour in the berries carefully, and shake the dish once in a while to keep the fruit heating evenly. As soon as it comes to a good boil, draw the saucepan to the edge of the stove, and dip into hot jars with a handled cup. Put the covers on quickly, and screw them on tight. Lay the jars on the side, and turn them once in a while during the cooling; and when they are cold, and set upright, the berries will be evenly distributed through the jar.

CANNING FRUIT WITHOUT SUGAR

Fruit of any kind suitable for canning may be preserved without sugar. The sugar can be added when the fruit is used, exactly as is done with fresh fruit. If the fruit when canned is thoroughly ripe, it may be eaten without any additional sugar, and is sweet enough for many tastes. The riper the fruit, provided it is sound, the more sugar, flavor, and nutriment it contains.

Ripe fruits are excellent for making butters. About 1 cupful of sugar to 12 cupfuls of fruit pulp should be used if sweet butter is desired; but the following recipe, if followed, will give a butter which has a sweetness and flavor that are greatly relished, without the use of sugar.

APRICOT BUTTER

Select overripe fruit, the riper the better, provided it is good. Wash and pit. Put through a colander, rejecting the skins. Do not heat the fruit in the skins, as that extracts a strong acid flavor. Cook the pulp down to the desired stiffness, adding neither water nor sugar. Pour into glass jars, with rubbers on, and screw the covers down tight. Place on the false bottom of a water bath, and into the boiler pour water the same temperature as the fruit, until

it reaches about two thirds the height of the jars. Cook for 20 minutes after boiling begins. This last boiling is to make sure that the sterilization of the fruit is complete, and thus insure its keeping qualities. Remove the cover from the boiler, tighten the covers again, invert, and let cool.

JELLY MAKING

Because of the concentration of a large amount of cane sugar in jelly, it is unwholesome, and should be used sparingly, if at all. Most women, however, desire to put up a few glasses of jelly to have on hand for special purposes, and a few recipes will be given for the kinds most commonly used. The fruit juice can be put up in glass jars, the same as canned fruit, if desired, and the jelly made as needed.

Large fruits, such as apples, should yield about 3 quarts of strained juice from 8 quarts of fruit and 4 quarts of water. Juicy plums will require only 3 or 3½ quarts of water to 8 quarts of fruit. Add the water to the fruit, and simmer slowly until done. Then hang up in a bag to drip. The time of boiling the juice after adding the sugar will depend on the concentration of the fruit juice, the proportion of sugar, and the pectin, and, in all probability, the degree of acidity. The two principal causes of failure in jelly making are: first, the common practice of adding too much sugar; second, the differing composition of fruit juices.

In a dry time, the juice in fruit is not very abundant, and the percentage of sugar is high. On the other hand, if fruit is picked after a rain, the amount of water in the juice is increased. As a result, the fruit from the very same tree yields juice with less sugar after a rain. These facts will explain why the amount of sugar that must be added to make the juice "jell" varies at different times.

PLUM JELLY

If the juice is very much diluted, it should be boiled before the sugar is added, to concentrate it, so that the cooking after the sugar is added will not be too long. To each quart of juice, add 1 quart of sugar, bring to a boil, skim, and let boil gently until, when a spoon is dipped into the jelly and lifted, it is coated with jelly.

Then pour into hot glasses, and set away until cool. Another test used, perhaps more frequently, is the cooling test. Drop a teaspoonful of the jelly into a saucer, set in a cool place, and stop the boiling of the jelly until you determine whether the mixture will set. As soon as the jelly is hardened, pour a thin coat of hot paraffin over the top of each glass, and it is ready to store.

CURRANT JELLY

Select currants that are not too ripe. Wash them, but do not stem. Drain well. Mash a small quantity at a time in a stone crock, with a potato masher, and squeeze through cloth. Then strain the juice again without squeezing, so that the liquid may be clear. Put the liquid on the fire, in a porcelain-lined kettle, and bring to a boil. Heat the sugar in the oven separately; and when the juice has boiled from 15 to 20 minutes, stir in the hot sugar, quart for quart, and continue stirring until it is dissolved. Bring to a boil, skim, and let boil 2 minutes. Take glasses out of hot water, fill them with the boiling liquid, and set away until jellied. Then cover with paraffin, as usual.

CRANBERRY JELLY

1 quart cranberries 1 pint water
1 pint sugar

Pick berries over, wash, and drain well. Add 1 pint water to the berries, and let boil 8 minutes after boiling begins. Mash through a colander, add sugar, and bring to a boil. Skim, and let boil gently for 4 minutes. Then pour into hot glasses or jars. When set, pour hot paraffin over the top of each glass.

CRANBERRY SAUCE

1 quart cranberries 3 cups water
1½ cups sugar

Pick over the berries carefully, wash, and drain. Bring the water and sugar to a boil, add the berries, and let boil slowly for 15 minutes; then set aside to cool.

XXV.

MISCELLANEOUS RECIPES

"Diet cures mair than doctors."

BUTTER SUBSTITUTES

The great increase in tuberculosis in cattle, together with the continued rise in the price of all classes of foodstuffs, has created a desire for some substitute for dairy butter which will be less expensive, yet wholesome and appetizing. There are various commercial brands of vegetable butter now on the market, put up in convenient form, and used by many, both for table use and also for cooking purposes.[1] When such cannot be obtained, the following preparations may be used with good results. For use in the recipes throughout this book, dairy butter may be substituted in the place of vegetable butter, when preferred, the same proportion being used as of the vegetable butter.

Emulsified Vegetable Oil

Secure a high grade of cottonseed or corn oil. Beat 1 egg slightly, and add the oil, a few drops to begin with, beating constantly and increasing the oil gradually. Add 2 teaspoons of lemon juice, then more oil, until 3 cups of oil have been used, and the mixture is smooth and quite thick. Salt to taste, put into a well covered crock, and use the same as dairy butter.

Vegetable Butter

Take any good brand of solid vegetable fat, such as a good coconut product, or hydrogenated vegetable fat.

a. Scrape well colored carrots, and press out the juice through a cheesecloth. Put the vegetable fat into a bowl, add salt to taste,

[1] The mention of a proprietary substance in a recipe must not be taken as a guarantee by the authors. Our knowledge of the manufacture of these fats is necessarily limited; but we have reason to believe they are wholesome, and contain no animal fat.

and work in enough of the carrot juice to give the color of dairy butter. Cool, mold on a dish, and use the same as dairy butter. The carrot juice imparts a good flavor, and is rich in vitamine constituents.

b. To 1½ cups of solid vegetable fat, add 3 tablespoons cream or canned milk, and work into the fat. Add salt to taste, 2 or 3 tablespoons lemon juice, and vegetable butter color to give the color of dairy butter. Work with a spoon until well blended, cool, and use the same as dairy butter.

PASTEURIZED MILK

Experiments made by the Bureau of Animal Industry (*Reference* — M-2. 212. 9), United States Department of Agriculture, Washington, D. C., have shown that the tubercle bacilli and the bacilli of typhoid were killed when milk in which either of these organisms had been placed experimentally was kept at a temperature of 140° F. (60° C.) for 20 minutes; also that heating milk to 185° F. in the so-called "flash" Pasteurizing apparatus, and then cooling it, serves to destroy any tubercle bacilli that may be present.

Method.— Place a rack or a piece of thick wire netting in the bottom of a pail or a large saucepan. Arrange the bottles of milk on the rack. Wipe the mouths and caps of the bottles with a wet cloth, but do not remove the caps. Make an opening in the cap of one of them, large enough to insert a thermometer, which must be previously sterilized. Surround the bottles with cold water until the water reaches nearly to the top of the bottles. Place over the fire, and bring quickly to the temperature of 150° F., as indicated by the thermometer within the bottle. Remove from the saucepan, cover with a cloth, and let stand on the table for 20 minutes, after which cool gradually by setting the bottles into warm water, then cooler, and lastly cold water. Set on ice if it is available, and do not remove the caps until the milk is needed.

BUTTERMILK

The therapeutic value of buttermilk is well known to the medical profession. People who suffer of such diseases as acute

diarrhea, gastritis, and intestinal diseases, during the hot season, often find the use of sour milk one of the best means of combating the trouble. The claim put forth is that many of the putrefactive germs of the large intestine are gradually replaced by the harmless lactic acid germs. In the making of buttermilk from acid-forming ferments, the procedure is much the same in each case. The milk is first boiled, in order to destroy the other germs that are always found in milk; then the milk is kept at a temperature favorable to the growth of these beneficent germs, varying somewhat with each kind of ferment.

YOGURT

Yogurt tablets contain the bacillus Bulgaricus, which grows actively in milk at the temperature of the human body, but grows much more rapidly at a temperature of about 115° F. Yogurt tablets, like other lactic acid-forming ferments, contain the active ferment in a latent form; thus it takes a number of hours for them to develop actively. For rapid growth, it is necessary that the temperature of the milk should be maintained at about 115°. At a lower temperature, the bacillus Bulgaricus grows more slowly; and below 98°, it ceases to grow.

Many fail in their attempts to make yogurt buttermilk, because of their ignorance of the fact that this milk ferment requires a much higher temperature for growth than do other milk-souring ferments. Success in making yogurt depends largely on observing these few points:

Starter.— Heat 1 cup of milk to the boiling point in a double boiler, and keep at that temperature for about 10 minutes; then set in a pan of cold water, and cool to about 115°. Dissolve 2 yogurt tablets in a little milk, and add to the warm milk. Mix, cover, and set on the top of a boiler of hot water, wrapped in a cloth so as to keep the temperature of the mixture as nearly uniform as possible. Renew the hot water in the boiler every hour or so, until the milk begins to coagulate, which will require all the way from 8 to 12 hours. Then set in a cold place; and in 12 hours, you have your starter.

Yogurt.— Sterilize a quart of milk, and cool to about 110° to 115° F. Add ¼ cup of the starter to begin with, first having beaten it with a whip to make it smooth. Mix, and set in a warm place, the same as for the starter, for about 5 to 8 hours, or until it coagulates; then put in a cold place. Beat with an egg whip before serving. The starter is not good to drink, and need not be kept after the first batch of yogurt is made; but reserve a portion of this batch as starter for the next. Use less and less of the starter as it grows older, until a quart of milk can be soured with 2 teaspoons of yogurt starter. If the buttermilk tastes too acid, or if it is covered with a thin whey, use less of the starter. Just so it coagulates, that is the main objective. Use as little of the starter as possible to accomplish that purpose.

LACTOSA

Lactosa may be made successfully with less warming than yogurt; and for this reason, it is preferred by some. It may be made by adding 1 tablet to a gallon of scalded and warm milk, and letting it stand in a warm place for from 10 to 20 hours, until it coagulates; or make the same as yogurt, using about the same amount of starter for the same amount of milk, and simply wrap in a cloth until coagulated, which will require from 8 to 12 hours if not kept warm throughout.

COTTAGE CHEESE No. 1

Set a dish containing yogurt or lactosa in a pan of hot water, cover, and heat until the milk forms into a curd; then set on a table and let cool. Pour into cheesecloth and hang up to drain. Rub smooth with a little Pasteurized cream, yogurt, or canned milk, and a little salt, and serve.

COTTAGE CHEESE No. 2

Pour boiling water into clabbered milk until whey forms. Let cool 15 minutes or longer; then strain as usual.

NOODLES

1 egg
1 tablespoon milk
About 1¼ cups white flour
A few grains of salt

Beat the egg slightly with a fork. Add the milk, a sprinkle of salt, and flour sufficient to make a dough that will not stick to the board. Divide in 2 pieces, and roll out to the thickness of paper, having the board and the dough well floured while rolling out. Let dry for a few minutes; then cut in strips 1½ inches wide, pile in tiers, and cut crosswise into fine shreds with a sharp knife. These will keep well if properly dried after shredding.

BROWNED FLOUR

Sift white flour into a baking pan, put into a good oven, and bake to a nice brown, stirring often, so that it may be uniform in color and not scorched. Sift again, and keep for use as needed.

CREAM ROAST FLOUR

Sift flour into a baking pan, about 2 inches deep. Put into a moderate oven, and stir often until lightly toasted, but not browned at all. Sift again, and keep for use as needed.

BREAD CROUTONS

Trim the outer crust from stale bread. Cut into ½-inch cubes. Bake in an oiled baking pan, stirring often, until a light brown all the way through. For soup *croutons,* cut the bread into ¼-inch cubes, and bake the same as above.

HOMEMADE CEREAL COFFEE

⅔ cup corn meal
2 cups bran
⅓ cup molasses
½ cup boiling water

Mix the dry ingredients in a bowl. Add the hot water to the molasses, and mix well. Pour the wetting on the grain, rub between the hands, and mix thoroughly. Put into a baking pan, and bake in a good oven until well burned, stirring often, so that the color may be uniform and almost black.

FAVORITE SOY BEAN COFFEE

Put a layer of soy beans (preferably the yellow kind) into a shallow baking pan, and roast in a medium oven until when a kernel is broken open, it is the color of ordinary roasted coffee. Remove from the oven, grind through a food mill set quite fine, and use in the same manner as ordinary coffee. Add boiling water, bring to a boil, and let stand on the edge of the stove under cover for 10 minutes; then strain.

SOUP ROYALE

Separate 2 eggs, and add 2 tablespoons of milk to the whites, and the same amount to the yolks. Beat only slightly with a silver fork, to mix ingredients thoroughly, adding a sprinkle of salt to each. Oil 2 small cups or molds, and have the bottoms lined with a piece of paper. Pour into the separate molds, set in a pan of water, and poach in the oven until set; then remove, and set in cold water to cool. Cut in diamond shapes or dice, and use as garniture for any clear soup or broth.

NUT AND FRUIT BARS

1½ cups dried figs or seeded raisins, or both
⅔ cup ground walnuts
⅓ cup gluten meal or cracker crumbs

Wash the figs, place on a baking sheet, and put into the oven until hot through; then remove. Grind the nuts through the mill first, then the fruit. Mix with the cereal, and grind all together twice; then roll out ½ inch thick, and cut into small squares.

GRANO CEREAL

2 cups pastry flour
⅓ cup rolled oats
¼ cup corn meal
Large ½ cup water
¼ teaspoon salt

Mix all the dry ingredients. Add the water slowly, stirring constantly through the flour, so as to avoid getting any particles of flour too wet, and mix to a stiff dough. Work on the board for a few moments; then roll out ¼ inch thick, cut into strips, lay in a baking pan, prick with a fork, and bake to a light brown color. When cold, grind through a food chopper, using a coarse knife.

POP CORN BALLS

1 tablespoon vegetable butter
⅔ cup molasses
⅓ cup sugar
2 quarts freshly popped corn
A sprinkle of salt

Melt the butter in a saucepan, add the molasses and the sugar, and stir until the sugar is dissolved. Let boil gently until when a little is dropped into cold water, it becomes brittle. Pour immediately over the slightly salted pop corn, folding the corn over and over as it is being added. Butter the fingers, and shape at once into balls. A few chopped walnuts added to the corn improve it.

XXVI.

WARMED-OVER DISHES

THE following is a list of dishes that are suitable for preparing the day before they are to be served, and reheating, browning, or baking, as the case may be, such as "Sabbath dinner," picnic dinner, etc. In all the following dishes, the food is prepared, cooked, and seasoned the day before it is used; and in the case of most of them that require a sauce or gravy, they are mixed, ready for warming in the oven or over the open fire.

BREAKFAST CEREALS, TOASTS, ETC.— Page 216

SOUPS — Page 122

Vegetable broth, 124
Potato with dumplings, 124
Vegetable chowder, 124
Noodle, 126
Cream of tomato, 130
Fruit soup, 131
Purée of brown beans, 126
Puree of lentils, 126
Tomato bisque, 127
Cream of Lima bean, 128
Cream of peas, 129
Cream of corn, 130

ENTRÉES — Page 132

Savory hash, 134
Lentil and potato hash, 135
Nut and potato pie, 135
Favorite lentil patties, 141
Rice and nut patties, 141
Bean and potato pie, 142
Bean and macaroni pie, 143
Lentil and rice loaf, 147
Macaroni family style, 143
Vegetable loaf *en aspic,* 151
Baked garbanzos, 156
Potato and noodle stew, 138
Lentil and potato stew, 138
Bean and macaroni stew, 141
Macaroni *au gratin,* 144
Macaroni egg sauce, 144
Noodles *au gratin,* 145
Spaghetti in tomato, 148
Spaghetti and cornlet, 149
Corn tamale, 152
Eggplant *sauté,* family style, 142
Stewed Lima beans, 154

VEGETABLES — Page 161

Stewed tomato, 163
Breaded tomato, 163
Stewed corn, 164
Corn with bell peppers, 164
Spinach, 167
Greens, 168
Green peas, 162
Stewed Okra with tomato, 173
Creamed potato, 177
Summer squash, 169
Winter squash, 170
Green Lima beans, 171
Succotash, 171
Italian beets, 167
Cauliflower *au gratin*, 173
Warmed mashed potato, 175
Mashed potato cakes, 176

SALADS — Page 178

Lettuce and tomato, 181
Combination salad No. 1, 181
Cucumber *au natural*, 182
Potato salad, 184
Beet and potato, 184
Beets in lemon, 187
Beet and egg, 185
Italian salad, 184
Fruit salad, 187
Fruits and nuts, 188
Prune and pecan nut, 188
Raisin salad, 189
Macaroni salad, 185
Macaroni and olive, 185
Egg salad, 185
Nut and celery, 185

DESSERTS — Page 190

Graham fruit pudding, 192
Fruit tapioca, 193
Lemon snow, 194
Orange cream pudding, 197
Pressed fruit, 197
Prune pudding, 197
Sago fruit mold, 198
Fruit gelatin, 201
Pies, 202
Bread custard, 195
Cream rice, 195
Crumb custard, 196
Cream tapioca, 193
Oatmeal pudding, 195
Baked custard, 199
Cream puffs, 200
Cakes, 207
Cookies, 207

WHEAT FLOUR AND SUGAR SUBSTITUTES

Measurements of Substitutes Equal to One Cup of Wheat Flour

These weights and measures were tested in the Experimental Kitchen of the United States Food Administration Home Conservation Division, and of the United States Department of Agriculture, Office of Home Economics.[1]

[1] Bulletin California State Board of Health, June, 1918.

In substituting for one cup of wheat flour, use the following measurements. Each is equal in weight to a cup of flour; thus, for each cup of wheat flour, use the amount of substitute given in the table.

Barley	1⅜ cups	Potato Flour	¾ cup
Buckwheat	⅞ cup	Rice Flour	⅞ cup
Corn Flour	scant 1 cup	Rolled Oats	1½ cups
Corn Meal (coarse)	⅞ cup	Rolled Oats (ground in food chopper)	1⅛ cups
Corn Meal (fine)	scant 1 cup	Soy Bean Flour	⅞ cup
Cornstarch	¾ cup		

Sweet Potato Flour ..... 1⅛ cups

SUBSTITUTE COMBINATIONS

Better results are obtained by the use of two substitutes together, than by the use of one alone. Some good combinations are:

Rolled oats (ground) and corn flour
Barley flour and rice flour
Buckwheat flour and potato flour
Soy bean flour and corn meal
Peanut flour and sweet potato flour

SUGAR SUBSTITUTES

As substitutes for sugar for cooking purposes, corn sirup, molasses, glucose, maple sugar and sirup, and also honey come in for their share of usefulness. The question arises in the mind of many a housewife as to how much of these diluted sugars should be substituted in customary recipes. For this reason, the following facts may be of interest.

Corn sirup and maple sirup are not so sweet as sugar, and when used to replace it, should be increased from one half to two thirds. For instance, if a recipe calls for 1 cup of sugar, use as substitute 1½ to 1⅔ cups of sirup. In this case, allowance must be made for the increase in liquid. Every cup of sirup furnishes ¼ cup of liquid; therefore for every cup of sirup that is substituted for sugar, reduce the original amount of liquid in the recipe ¼ cup. Unless such allowance is made for the liquid that the sirup adds, an extra amount of flour is needed to obtain the necessary thickness to the batter, and a poor product is likely to result.

In using molasses and brown sugar, no change need be made so far as amounts for sweetening purposes are concerned, because

what these lack in sweetness is largely made up in flavor. However, the same allowance must be made for the liquid as when sirup is used. Glucose is best when used with part sugar, say ⅓ sugar to ⅔ glucose by measure. When used thus, it is suitable for canning purposes, also for the making of sauces, etc.

Honey, one of the most staple sweetenings in the world, and probably the longest used, has not been in very common use for cooking purposes. Its sweetening power is about the same as that of sugar, and it should be used in the same proportion as white sugar, except that one fourth less of liquid should be used in a recipe with honey than with sugar. Honey is best adapted for table use; and for this purpose, it had better replace white sugar entirely.

APPENDIX

ACID-FORMING AND BASE-FORMING FOODS

ACIDOSIS

Normal blood is always alkaline; but this alkalinity is reduced by an excess of acid waste produced in the tissues as a result of improperly balanced nutrition, or by disease.

The term "acidosis" is used in a general sense to indicate any condition in which there is a lessened degree of alkalinity of the blood. If the blood has decreased in alkalinity from diabetes, this is acidosis. If it has decreased in alkalinity from nephritis, or from pernicious anæmia, or as a result of an unbalanced dietary, this is acidosis. The form taken makes little difference; be the condition called anæmia, or neuritis, or nervous breakdown, the cause is usually one and the same.

Mineral salts (organic) in solution, as obtained from greens, succulent vegetables, and fruits, are of first importance in the maintenance of normal blood alkalinity, so necessary to the preservation of health, and of life itself. All the fluids of the body,— blood, saliva, bile, pancreatic juice,— must be permeated with these essential salts in order to insure the proper functioning of the body machinery.

The cleaning of the inside of the body means practically the same as the cleaning of the inside of the home; namely, the removal of waste. As the furnace fire leaves the ashes of combustion deposited on the grate, so the process of chemical reaction in the body leaves waste products, which are pushed out into the lymph spaces of the tissues, and finally make their way into the circulating blood.

All the processes of life consist in the building up and breaking down of body cells, which processes result in poisonous waste products of an acid nature. It follows, therefore, that the tissues must be constantly bathed in an alkaline fluid to neutralize the acids thus formed. Failure to provide the system with a sufficiency of these basic foods will result in acidosis of varying degrees of severity.

By way of illustration of this reaction which is constantly occurring in the tissues, take some kind of acid, such as cream of

tartar, or hydrochloric acid, or sour milk, and stir into it a little common baking soda, which is a base. As soon as the soda and the acid come together, they begin to bubble and froth and foam, until, if mixed in the right proportion, they neutralize each other, forming a salt in solution. Some acids are strong, others are weak; but all acids are neutralized when brought in contact with bases, or alkalies, in the right proportion.

This will give some idea of the process of neutralization continuously going on in our bodies. If the basic, or alkaline element is predominant, an alkaline salt is produced. If the acid element is the stronger, the salt produced is acid. If the balance is in favor of alkalinity, the result is pure blood and clean tissue, with consequent good health. If the balance is in favor of acidity, the result is impure blood, diseased condition, and premature death.

Protein foods, particularly meat proteins, tend to form these acid wastes by decomposition in the digestive tract, in which case the acid is in the form of sulphuric acid, which, if not immediately neutralized, is very injurious to the cells.

Not infrequently, in the care of the sick, a physician is confronted with a case where the urine test shows an acidity several hundred times as great as the normal. Investigation in such cases usually shows the diet to have been "ham and eggs for breakfast, beefsteak for dinner, and roast meat for supper." Whether it is the exceedingly high protein intake that is responsible for this condition, or whether it is particularly the resulting acid waste in the tissues, or both, is somewhat of a conjecture. Nevertheless, this type of diet often causes a man to fall dead on the street.

The first and most important procedure on the part of the physician is to remove from the diet of the patient the acid-forming foods, and put him on a strictly alkaline diet, until the surplus acid is neutralized, after which the proportions of acid-forming and base-forming foods in the diet must be carefully regulated.

The following table, adapted from Professor Sherman's "Food Products," pages 562-575, shows, by way of comparison, the "potential alkalinity," or base-forming elements, and the "potential acidity," or acid-forming elements, in 100 calorie portions of certain foods. While these lists are incomplete, they will be helpful

in calling attention to a means of checking the modern tendency to a reduction in the alkaline reserve of the body.

ACID-FORMING		BASE-FORMING	
Oysters	30	Spinach	113
Haddock (entrails removed)	12	Cucumbers, fresh	45.5
Smelts	10.1	Celery	42.2
Chicken	10	Chard, Swiss	41.1
Egg, white	9.5	Lettuce	38.6
Halibut	7.8	Figs, dried	32.3
Whitefish	7.6	Tomato, fresh	24.5
Eggs, whole	7.5	Carrots	24
Egg Yolk	7	Olives	18.8
Beef, round, lean	6.8	Parsnips	18.2
Mackerel, fresh	6.7	Cabbage	18
Veal, breast, lean	6.7	Cauliflower	17.4
Salmon	5.4	Pineapple, fresh	15.7
Turkey	3.6	Orange Juice	14.4
Cracked Wheat	3.3	Lemons	12
Shredded Wheat	3.3	Apricots, fresh	11
Lamb, breast of	3.3	Radishes	9.8
Oatmeal	3	Potatoes	8.6
Bread, whole wheat	3	Raisins	6.8
Barley, pearled	2.9	Squash	6.1
Bread, white	2.7	Buttermilk	6.1
Rice	2.7	Apples, fresh	6
Mutton, chuck	2	Pears, fresh	5.6
Peas, green	1.2	Milk, whole	2.6

The acid-forming elements, it will be observed, predominate in fish, meat, eggs, and cereals; hence these foods should be plentifully accompanied by those possessing alkaline elements, such as fruits and vegetables. The high protein, acid-forming fish and meats could well be dispensed with altogether. The tendency in modern dietaries is toward acidity. Very often, to the acid-forming meat, fish, eggs, or cereals, has been added, instead of base-forming vegetables and fruits, a preponderance of milk, fat, and sugar in various forms, all of which are practically neutral. Thus nothing is provided to offset the acid-formation in the tissues. If the amount of acid ingested, or produced in the body, is so great that it cannot be neutralized by the base-forming element present, the result is acid intoxication.

The efficiency of all the body processes is dependent on a proper balance between acidity and alkalinity; and this balance

may easily be disturbed, with most unfavorable results, by overindulgence in certain classes of foods. Therefore it should be clearly understood that to the foods which predominate in acid-forming elements, the fresh vegetables and fruits must be added liberally in order to maintain normal alkalinity in the tissues and the body fluids. It should be understood, furthermore, that an excess of base-forming elements in food is not objectionable, but on the contrary, is most essential. The following is from "Food Products," page 355:

"An excess of base-forming elements in the food is not in any sense objectionable, since the oxidation processes in the body are constantly yielding such large quantities of carbonic acid that any surplus of base-forming elements goes to form bicarbonates which do not disturb the neutrality, but rather act as a reserve material for its maintenance."

PURE BLOOD AND IMMUNITY

It was but a few decades ago that Pasteur gave to the world proof of the close relation between disease and those minute organisms too small to be perceived by the naked eye, bacteria. Previous to that time, the world had experienced frightful epidemics of infectious diseases, which had often persisted unchecked, through ignorance of the cause. Subsequent investigation and experience have brought to view a more hopeful aspect of the whole problem, by demonstrating that the body in a state of health is able to protect itself and to ward off the casual agents of disease.

Natural immunity depends on nutrition. The severity of any disease is determined largely by one of two factors, or by both; namely, the intensity of the cause, and the state of the human organism in regard to its power of defense. Self-preservation is the first law of nature; but when a child is fed on a one-sided diet, such as white sugar, candy, white bread, cookies, cakes, flesh meats, *et cetera,* its immunity is soon destroyed, for all denatured foods are so void of life-giving elements that they cannot be properly assimilated from the blood and built up into body tissue. The resulting mineral and vitamine starvation is a primary cause

of a multitude of diseases; for this loss of food mineral to the body fluids not only impairs the food value of foodstuffs, but tends to make way for poisons to accumulate in the system.

"The life of the flesh is in the blood," says the Book of books. When the blood is below par, the health is impaired. Healthy blood means healthy tissue. For perfect health, there must be normal digestion, absorption, and assimilation, and proper elimination of waste products. But one and all, these factors depend largely if not entirely upon the first cause,— the supply of foods containing all the *primary elements.*[1]

It has been proved that the practice of removing the mineral and vitamine from our foods by milling and refining and by wrong methods of preparation and cooking, is the principal cause of malnutrition in children and of practically all our diseases. A brief study of the functions and uses of one or two of the most familiar and important of these minerals may help us to sense the vital necessity of their presence in the food we eat.

FOOD IRON

As we have learned in previous chapters, it is the organic iron derived from vegetables, fruits, and unprocessed cereals taken first-hand from nature, that builds and maintains the hæmoglobin (red coloring matter) of the blood. Horticulture has taught us that even plants may suffer from anæmia. Deprived of iron, their leaves become a pale green, and the flower lacks brilliance and luster. The only remedy for this unfavorable condition among plants is the introduction of iron, either by the pouring of water from rusty iron filings into the soil around the roots of the affected plant, or by the addition of iron-containing fertilizer to the earth.

The human sufferer from anæmia has a sallow complexion, his face, lips, and finger nails are pale, because his oxygen supply is insufficient to burn up the body waste, and it accumulates in the tissues. His oxygen supply is insufficient because of a lack of hæmoglobin in the red blood cells. It is this iron-containing hæmoglobin in the blood which entraps the oxygen in its passage

[1] See page 29.

through the lungs, and carries it to all parts of the body, thus facilitating the oxidation of the body wastes. Oxygen, moreover, is needed to release the energy stored in the soluble food that has been carried to the tissues by the blood; and because of its lack, the patient is weak and languid. His appetite is often poor, because the food eaten and not properly assimilated has accumulated as wastes in the tissues. He is short of breath, even though the lungs supply an abundance of oxygen and the heart be not at fault, because sufficient oxygen is not carried to its destination in the cells of the tissues, there to burn up the food and release energy. Thus the ultimate effect on the body is practically the same as if the air supply were in part cut off by disease of the lungs or by other cause.

This *organic* iron is present in all the internal secretions of the human body, and possesses chemical properties by means of which it is able to absorb and condense oxygen, carrying it through the circulation to every minute cell of the body, and bringing it into immediate contact with each minute waste particle, carrying back to the lungs the products of combustion in the form of carbon dioxide. This great work of oxidation and elimination of poisonous matter, which is constantly going on within the body, is all dependent upon the presence of a small but definite amount of iron in the blood.

Experiments on animals have shown that the ordinary iron with which we are all familiar (inorganic), such as that found in a blacksmith shop, or any of its compounds contained in medicines or mineral waters, cannot be utilized in keeping good the stock of hæmoglobin. On the contrary, natural foodstuffs contain iron in the *organic* form only (made by the plants), which is the source of iron used by the body in the formation of hæmoglobin. Professor Sherman, in commenting on the experiments of Bunge along this line, says:

"Inorganic iron, when absorbed, is not utilized in the formation of hæmoglobin to any appreciable extent, but remains unused in the tissues — a strong indication that medicinal iron acts by stimulation rather than as material for the construction of hæmoglobin. Evidently, then, we should look to food rather than to medicines

and mineral waters for the supply of iron needed in normal nutrition."—*"Chemistry of Food and Nutrition," chapter 11.*

For a list of foods that are rich in organic iron, see pages 33 and 246.

CALCIUM-RICH FOODS IN TUBERCULOSIS

A diet that is rich in calcium is of first importance in combating tuberculosis. The tubercle bacilli carry on their destructive work on the lung tissue as a result of lowered vitality. When the bacilli attack the tissues, the white blood corpuscles, called the soldiers of the body, surround them by way of counter-attack. If the body's reserves are built up to normal, these little warriors are able to destroy the bacilli or to keep them at bay.

The various organic mineral constituents found in fresh foods are absolutely necessary to the building up of the white corpuscles. Calcium is a great building factor, especially in tuberculosis, for the reason that as the white corpuscles attack the bacilli, the body makes use of the calcium in building a wall around them to imprison them, and thus prevent further destruction of tissue, and gradually the wound becomes calcified and apparently healed.

In performing post-mortem examinations, surgeons often discover that a lung of the deceased had at some previous time been half consumed by disease, and then "plugged up," "walled in," or healed, so satisfactorily that the individual was enabled to live in apparent health for a number of years. Thrusting his scalpel into the calcified wall of the wound, the surgeon observes a mass of tissue of granular appearance, which he will tell you is "calcified tissue," or "tubercles." Hence the need of providing the body with a quality of food that contains suitable building material for the all-round wear and repair of the living machine.

Calcium, moreover, is the chief constituent in the development of the bones and teeth. It is essential to the coagulation of the blood, and to normal action of the heart muscle. Professor Sherman says: "The calcium requirements of women are greatly increased by maternity. The need of an abundance of calcium for the rapidly growing skeleton of an infant is obvious. Before birth, and normally for several months after, this demand of the

child is satisfied through the mother, whose calcium requirement is thus greatly increased. The weakening of the bones and teeth which is said to be a common accompaniment of pregnancy and lactation is held by Bunge to be largely due to a withdrawal of calcium from these structures to meet the nutritive requirements of the embryo or nursling."—*"Chemistry of Food and Nutrition," page 264.* (For a list of calcium-rich foods, see page 34.)

CALCIUM VERSUS SUGAR

In sugar cane and in beets, sugar and calcium are always combined; but in order that sugar may be crystallized, all the valuable mineral matter, including calcium, must be removed. Calcium in the sirup from cane or beets prevents the crystallization of sugar. Refined sugar, therefore, has a very strong chemical affinity for the calcium which was a part of the original combination in cane or beet juice; and when such sugar is absorbed into the system, and its atoms find calcium present in the blood, they immediately unite with it, and the result is a substance that cannot be utilized by the body in its normal building processes. Hence the calcium that should have gone into the building of bones and teeth, and into the formation of blood and tissue, is lost. Thus does refined sugar, robbed of its calcium, retaliate, so to speak, and replenishes itself, when taken internally, from our own tissues and body fluids. Candies are made from white sugar and glucose, which have been robbed of all mineral matter, and consequently are worse than "foodless food," because they use up the reserve lime already deposited in the tissues.

It is a noteworthy incongruity, that with more and better-perfected toothbrushes and more tooth paste on hand to-day, probably, than at any previous time in the world's history, there should be more dentists putting in full time, more bad teeth, and more infected gums, than ever before. Coincident with this stern fact, it remains that white sugar is in reality only a modern commodity. Two centuries ago white sugar was sold practically only at drug stores, where it was used for sweetening bitter medicines; now about ninety pounds per capita is used in the United States annually. Has this not something to do with decayed teeth?

CANCER, A PROBABLE CAUSE

Cancer, up to the present time, has been regarded as incurable, because physicians have failed to recognize its cause. An opinion has been held that the cause of cancer is local, whereas modern research seems to produce unmistakable evidence that the cause is a predisposing condition of ill health, particularly a condition of acidosis, or plain mineral and vitamine starvation.

Such a condition may be controlled and remedied by corrective diet and rational eliminative measures, which gradually restore normal alkalinity to the fluids and secretions of the body. Those base-forming or alkalizing substances which abound in all fresh salad vegetables, such as water cress, cabbage, lettuce, carrots, celery, and tomatoes, together with properly cooked vegetables, and breads made of unprocessed cereals, supply the blood with the constituents that maintain the body fluids in their proper chemical condition, thus preventing tissue change and decay.

It has been noticed that decayed trees exposed to the elements until the rains have soaked out their minerals, throw out certain fungus growths of a fibrous nature, as truly foreign to the original make-up of the tree as are tumors and cancer to the human body. Is not here a close analogy?

May we not find a possible solution of the cancer problem, in a return to the original diet provided for man? Peoples who live near to nature, subsisting on simple unprocessed foods, and exercising plentifully in the open air, are practically free from cancer, while peoples who partake largely of refined and demineralized foods are cancer-ridden. The deduction is obvious.

FOOD-HELPS IN SERVING THE SICK

There are a number of ailments in which the sufferer finds it difficult to take sufficient fruits or vegetables, on account of their bulky nature, and consequently he must receive the essential food mineral in the form of a bland solution, until he shall build up his reserve to such an extent that he is able to digest ordinary foods. Bran broth, when made without boiling, and seasoned with a little vegetable extract (vegex) and cream, is a palatable, bland mixture,

non-irritating, and is rich in the essential organic iron, calcium, phosphorus, and vitamines. The following instruction for hyperacidity cases, together with recipes adaptable to such conditions, will illustrate the point.

Hyperacidity and allied symptoms are often characterized by a burning or gnawing pain in the upper abdomen, which usually begins one or two hours after a meal. Flatulence, headache, and acid eructations are commonly associated. The object of the regimen is to select such articles of food as will combine most readily with the excess of acid, and to restrict temporarily such foods as would cause distress, in the meantime supplying in liberal amount the dietary essentials.

Such protein foods as milk, eggs, and sweet cottage cheese, taken in moderate amounts, seem to be very helpful, particularly milk. On the other hand, foods rich in starch and sugar — ordinary baker's bread, potatoes, fruits, *et cetera* — should be taken sparingly if at all, in the acute stage, because free acid appears in the stomach soon after eating, and interferes with the normal digestion of the starch under the influence of saliva. In hyperacidity, the starches used should be in the dextrinized form, like corn flakes and zwieback. Fats may be increased, especially cream, as they tend to inhibit the flow of acids and are soothing to an inflamed intestinal tract. For the noon meal, use the following bran broth, together with well cooked, tender spinach or other vegetable, mashed through a colander to remove the fiber, and seasoned with a little rich cream. Cream noodles (page 145), or macaroni, or dumplings (page 138), cooked plain, may be used with the above vegetable *purées* occasionally.

For the morning meal, follow the instructions given on pages 241, 242, for chronic colitis. With the browned white flour gruel, serve baked banana No. 1, page 235; or remove the skin after baking, and slice into the hot cream, and serve on toast softened with hot cream. The cream should be thinner, however, for the latter banana toast, than when served separately. Or use bland, cellulose-free cereal, such as cream of wheat, with cream; or soft cooked egg; or prune *purée* with cream. Use a small proportion

of zwieback or cream biscuit. Let the third meal consist largely of boiled milk, milk or cream toast, malted milk, prune *purée*, and cream or cereal coffee.

RECIPES

BRAN BROTH

Soak 1 pint raw bran overnight in 1¼ pints cold water. Heat over a slow fire, stirring often, until it is quite warm, but not too hot. Mash through a colander to extract the fluid. Add ½ cup hot water to the remnant hulls, and mash through the colander into the former liquid. Strain all into the double boiler. Dissolve 2 teaspoons savita or vegex in a little of the liquid for flavor. Heat to make palatable, but do not boil. Add a little cream or canned milk, if desired, and serve.

CREAM BISCUIT

1 cup entire wheat flour
2 cups white flour
1 teaspoon salt
8 tablespoons 40 per cent cream
6 tablespoons solid vegetable fat
5 tablespoons water

Mix all the dry ingredients in a bowl, add the fat, and rub between the hands until well blended. Mix the water and the cream together, and pour over the flour in a very slow stream, stirring constantly with a fork, and work into a stiff dough. Knead on the board for a few minutes, then roll ¾ inch thick, cut with a small biscuit cutter, prick with a fork, lay in a baking pan, leaving a little space between, and bake in a medium oven, to a light brown.

LAXATIVE WHEAT BISCUIT

2 cups warm water (105° F.)
1 cake compressed yeast
3 tablespoons brown sugar
4 cups entire wheat flour
1 cup bran
2 teaspoons salt
8 tablespoons solid vegetable fat

Dissolve the yeast in 2 tablespoons water. Add ½ cup of the warm water, and ½ tablespoon brown sugar. Mix, and set in a warm place until foamy, keeping it well covered (about 15 minutes). Put flour, bran, salt, crisco, and the remaining sugar into

a bowl, and rub between the hands until well blended. Add the remaining 1½ cups of warm water to the foamy yeast, mix well, pour over the flour mixture, and mix into a soft dough. Work in a bowl with a large spoon until the gluten is elastic, cover, and set in a warm place for about 15 minutes. Then work down thoroughly with a spoon, cover, and let stand again about 10 or 15 minutes, after which work down, turn out on a well floured board, and pat down with floured hand to ¾ inch in thickness. Cut with a small biscuit cutter, lay in an oiled baking pan, set in a warm place to rise about 15 minutes, then bake in a good oven.

OLD-FASHIONED HOECAKE

½ cup unbolted corn meal
1¼ cups milk
2 teaspoons brown sugar
½ teaspoon salt

Heat 1 cup milk in a double boiler. Blend the meal, the salt, and the sugar with ¼ cup cold milk, stir smooth, add to the boiling milk, and let cook 10 minutes, or until thick. Drop from a tablespoon into an oiled baking pan, leaving space between, and bake to a nice brown.

COMMUNION BREAD — REVISED

For a tenderer bread, follow the instructions given on page 121, except use 7 tablespoons pure oil and 8 tablespoons cold water instead of the proportions there given. Bake in a very moderate oven, and do not brown.

FRUIT AND NUT ROLL

4 ounces Brazil nut meats
4 ounces walnut meats
4 ounces blanched almonds
½ pound steamed figs
½ pound steamed seedless raisins
½ pound cleaned dates

Put the blanched almonds on an oiled pie tin with a sprinkle of salt, and toast very lightly in the oven. Grind all the nuts through a food chopper, using a fine cutter; then grind the fruit through in like manner. Mix in a large bowl, roll out into rolls

about 1¼ inches in diameter, roll in oiled paper, and lay in a pan for use as needed. This roll is very concentrated, and is especially helpful as a building food in anæmia or in a run-down condition. It will keep sweet and fresh for a long time.

BREAKFAST PATTIES

1 cup steamed natural rice
½ cup chopped walnuts
½ cup rolled zwieback
¼ teaspoon salt
1 egg
1 tablespoon vegetable butter
3 tablespoons chopped onions
1 cup tomato *purée*
⅛ teaspoon sage or marjoram

Simmer butter, onion, and savory over the fire for a few minutes; add the tomato, and bring to a boil, adding the salt to taste. Beat the egg slightly, and add the hot tomato, pouring it in gradually while stirring. Add the crumbs, and let stand for a few minutes. Add the nuts and the rice, and mix with a fork. Shape into patties, and bake in a quick oven, or brown lightly in a hot, slightly oiled skillet.

BROWNED MILK GRAVY

4 tablespoons vegetable fat
4 tablespoons white flour
⅓ cup canned milk
Salt to taste
2 cups liquid,—potato water or milk, or equal quantities of both

Put the fat into a skillet, and when quite hot, add the canned milk, and stir constantly until the albumin separates from the fat and turns a light brown color. Then remove from the fire, and draw the albumin to one side of the skillet with a large spoon. Mix the flour with the fat, and stir on the edge of the fire until a light brown color, then mix with the browned albumin. Add 1 cup of the liquid, and stir until smooth. Add the remaining liquid, salt to taste, let simmer for a few minutes, and serve.

SPAGHETTI WITH OLIVES

To half of the above brown gravy, add 1 cup solid pack ripe tomato and ⅓ cup sliced ripe olives. Let simmer for a few minutes, then add enough cooked spaghetti to dish up nicely. Put into an oiled baking pan, and brown very lightly in the oven before serving.

SAVORY NUT LOAF

1 grated onion
⅔ cup nut butter
1 scant teaspoon sage
¾ cup water
2 teaspoons salt
3 tablespoons vegetable butter
2 cups of the starch from "gluten biscuit" recipe, page 110

Use one half the recipe for gluten biscuit as given on page 110, and let the starchy water remain in a vessel overnight. In the morning, have the water poured off slowly and carefully, or skim with a spoon, leaving about 2 cups of the starch mixture. Grate the onion in a bowl. Add the butter and the savory, and let simmer over the fire for a few minutes, but do not brown. Add the water and the salt, and bring to a boil. Then add this hot mixture gradually to the nut butter, stirring until all is dissolved. Add the starch, mix well, and stir over the fire until thick and free from lumps. Then put into an oiled double boiler, and cook over boiling water for 4 hours; or put into a covered container, set into a steamer, and cook gently for 3 hours. Let cool overnight. Then slice, and brown in a quick oven or on a hot skillet, and serve with breakfast potato or with boiled dinner.

POTATO DUMPLINGS

1⅓ cups hot mashed potatoes
⅓ cup flour
1 tablespoon vegetable butter
1 egg
Salt to taste

Pare and boil potatoes until tender, then drain, saving the broth. Mash the potatoes through a ricer or a colander. Beat the egg until thick, add the melted butter, and mix with the potato. Salt to taste, and whip with a spoon until white and fluffy; then add the flour, and mix. Add enough water to the liquid from the potato to make 1½ cups, dissolve 1 teaspoon vegex in this liquid, and bring to a boil. Drop the potato by spoonfuls into the boiling liquid, cover, and let boil gently for 15 minutes. Serve with a little of the broth poured over each dumpling, and a sprinkle of chopped parsley.

CELERY RELISH

Dice 1 pint each of celery and white onion very fine. Add a pint can of tomato, and let cook until tender and quite thick. Add

1 tablespoon brown sugar and 2 tablespoons lemon juice, salt to taste, let simmer a few minutes, then let cool, and serve.

CARROT JUICE

Wash and scrape large, well colored carrots, and grate them into a bowl. Squeeze out the juice through a cheesecloth or a vegetable press. Serve plain, or it may be heated below the boiling point and seasoned with a little rich cream or canned milk. This and the following vegetable juice are excellent blood builders.

VEGETABLE JUICE

Pick over a bunch of tender spinach and a few beet or turnip tops, wash thoroughly in several waters, and wring out between the hands. Grind through a food mill, together with a bunch of radishes, having a basin under, to catch the juice as it drips from the mill. Grate two carrots and two turnips, add to the above ground vegetables, and press through a cloth, the same as above.

SUMMER SALAD

Add any left-over string beans, or peas, or chopped beets, or cauliflower, to an equal portion of diced cabbage and chopped tender spinach leaves. Flavor to suit, with diced onion and parsley, and blend with mayonnaise. Serve on lettuce leaf.

CARROT AND SPINACH SALAD

Wash, scrape, and grate into a bowl, well colored carrots. Pick over spinach very carefully, and wash in several waters; then wring out, and grind through a food mill. Use 1 cup ground spinach to 2 cups grated carrot, with chopped onion and parsley to suit the taste. Blend with plenty of mayonnaise, and serve on lettuce leaf. A few grated radishes may be added, or diced pimento, or both.

PEAR AND COTTAGE CHEESE SALAD

On a lettuce leaf, place one half a canned pear. Into the hollow, lay a heaping teaspoon of creamed cottage cheese, seasoned

with a bit of mayonnaise. Lay four strips of pimento on top of the cheese so as to form a diamond shape, put a half teaspoon mayonnaise in the center, and serve.

SAUERKRAUT

Remove the outer leaves from four medium-sized heads of cabbage (about 8 pounds), and wash them in water, to be kept for the top of the jar. Quarter the cabbage, and shred very fine, rejecting only the thickest part of the stem. Measure 2 tablespoons salt (1 ounce) in a dish. Place a layer of shredded cabbage on the bottom of an earthen crock, sprinkle with the salt, and pound down with a wooden potato masher until well packed. Add another layer of cabbage, with salt, and proceed as before, until the crock is nearly full. Spread the washed cabbage leaves over the top, and apply a granite plate that is of a size to fit snugly into the jar. Place a well washed and scrubbed stone on the top of the plate, to weigh it down; and at the end of ten days, the kraut is ready for use, either raw or cooked. When the liquid evaporates, add a little boiled and cooled water, and keep in a cool, dry place. This product contains a pure lactic acid, 1.49%, and compares favorably with the following, as given by Dr. Kellogg, in "New Dietetics":

Sauerkraut

Water	89.00
Protein	1.60
Fat	.35
Lactic Acid	1.50
Dextrose	.65
Mannose	1.00
Crude Fiber	1.90
Ash	2.90
Sodium Chloride	2.00

During the winter months, when fresh vegetables and fruits are scarce, this kraut furnishes a good source of soluble vitamines and organic iron, and a wholesome bulk to stimulate normal peristalsis, together with a pure lactic acid of vegetable form. For cooking, add diced onion if desired, or cook plain in a small additional quantity of water until well done. A little vegetable butter may be added before serving.

ADDITIONAL RECIPES

ADDITIONAL RECIPES

INDEX

"Finding the where of the what."

Acidosis 271
Acids and starches 73
Adaptation of food 93
Agar-agar 201
Albumenized milk 233
Albumenized water 233
Anæmia (secondary) 246
Apple dumpling, baked 207
  pie 203
  snow 193
Apricot butter 258
Apricots, stewed dried 192
Artichokes 173
Artificial stimulants 82
Asparagus, new 163
  with peas 163

Backbone of the meal 87
Baked dressing 133, 134
Baking powder 111
Balancing the food 53
Banana, baked 235
  cream pie 205
  rice 220
Barley, pearl 220
  water 231
Bean and macaroni pie 143
  and macaroni stew 141
  and potato pie 142
  frijoles with rice 146
  loaf, ribbon 155
  patties 155
  purée, browned 154
  purée of brown 126
Beans, brown, with mint sauce .. 156
  Lima, baked 154
  Lima, green 171
  Lima, stewed 154
  soy, and rice loaf 156
  soy, and rice patties 156
  soy, stewed 156
  string 162
  with dumplings 143
  with noodles 142
Beets, see Vegetables
Beriberi 16
Blancmange 196
Blood-building foods 246
Body-regulating substances 15
Body's internal defenses 31
Bran 15
  biscuit 106
  broth 281
Bran-fruit puffs 115
Bran tea 232
Brazil nut sauce 159
Bread 98
Bread, batter 113
  aërated oatmeal gems 114
  aërated wheat gems 114
  bran-fruit puffs 115
  corn bread 115
  corn cake 116
  corn dodgers 116
  corn meal puffs 113
  diabetic puffs 115
  hoecake, old-fashioned 282
  hot cakes 117
  johnnycake 116
  pancakes, sodaless 117
  pop-overs 114
  raisin puffs 114
  wheat gems 113
  wheat puffs 113
Bread *croutons* 265
  custard pudding 195
Bread, fermented 105
  bran biscuit 106
  corn bread, raised 108
  diabetic bread 110
  entire wheat 13, 33, 35, 87, 105
  fruit bread 106
  gluten biscuit 110
  Graham bread 106
  Graham buns 107
  laxative wheat biscuit 281
  Parker House rolls 108
  quick method 109
  rye bread 107
  shortcake 109
  steamed brown bread 109
  zwieback 111
Bread making, principles of 100
Bread, unfermented 111
Bread, unfermented dough 117
  buckwheat sticks 120
  buckwheat wafers 120
  communion bread 121, 282
  corn meal crisps 120
  cream biscuit 281

cream rolls 118
date rolls 119
entire wheat biscuit 118
entire wheat rolls 118
favorite wheat biscuit 119
fruit crisps 119
rye sticks 120
rye wafers 120
walnut sticks 119
wheat sticks 117
Bread, white and entire wheat .. 35
Broth, bran 281
vegetable 124
vegetable, special 232
Browned milk gravy 283
Brussels sprouts 174
Building and repair foods 12
Buttermilk 262
Butter substitutes 261
vegetable 261

Cabbage, see Vegetables
Cake, cup, Mr. Hook's 210
fruit, Mr. Hook's 211
jelly roll 209
layer 208
loaf 208
pound, favorite 211
shortcake 109
White Mountain 209
Cakes 207
Calcium in food 33, 277
Calcium versus sugar 278
Calories 26, 53, 90
Cancer 48, 279
diet in 240, 279
Canning and preserving 250
fruit 256
preservation in salt 255
preservation of eggs (water glass) 255
time-table for sterilizing 253
vegetables 253
without sugar 258
Caramel icing 213
Carrots, see Vegetables
Cauliflower, see Vegetables
Celery, see Vegetables
Celery relish 284
Cellulose 15, 34
Cereal coffee, homemade 265
fillets 150
Cereals, breakfast 218
corn meal mush 219
cracked wheat 219
Graham fruit mush 220
grano cereal with dates 221
pearl barley, steamed 220
rice, banana 220
rice, browned 220
rice, creamed 220
rice, natural, steamed 219
rice, white 220
rolled oats 219
wheat, steamed 220
Cheese, cottage 264
Chick peas, see Garbanzos
Classification, table of food 86
Coffee and tea 83
favorite soy bean 265
homemade cereal 265
Colitis, diet in 241
Combinations of food 72
Communion bread 121, 282
Comparative food values 59
Constipation 34
diet in 241
Cookery and food preparation .. 61
for the sick 228, 279
principles of successful 67
Cookies, bran-fruit 212
rolled oat 212
vanilla 211
Cooking lessons, course of 94
Corn, see Vegetables
Corn and tomato *soufflé* 153
bread 108, 115, 116
meal mush, browned 219
meal puffs 113
nut pie 149
tamale 152
Cottage cheese 264
Country gravy 157
Course of cooking lessons 94
Cracked wheat 219
Cranberry sauce 260
Cream biscuit 281
filling 200
puffs 200
rice pudding 195
roast flour 265
rolls 118
sauce 158
tapioca pudding 193
Creole sauce 159
Croquettes, rice and egg 155
rice, with jelly 198
Croutons, bread 265
Cruelty of flesh eating 51
Crumb custard pudding 196
Cucumbers, see Vegetables

Custard, baked 199
baked, soft 200
boiled 199
pie 206
sauce 160
Cutlet, nut, fine herbs sauce 154

Date rolls 119
salad, stuffed 189
whip 198
Demineralized food and constipation 34
Desserts 190
cakes and cookies 207
pies 202
puddings and jellies 192
Diabetes mellitus, diet in 243
Diabetic bread 110
food table 244
puffs 115
Diet in disease 236
anæmia (secondary) 246
cancer of stomach 240
colitis (chronic) 241
constipation 241
diabetes mellitus 243
diarrhea 242
gastric disorders 238
high acidity 240
infectious diseases 236
influenza 236
intestinal disorders 241
low acidity 239
measles 237
mumps 237
nephritis 246
pneumonia 237
scarlet fever 237
tuberculosis 243
typhoid fever 237
ulcer of the stomach 240
whooping cough 237
Diet, liquid 238
soft, semisolid, or semiliquid .. 238
Dietetic errors 79
Dough breads 117
Dressings, baked 133, 134
Dressings, salad 178
boiled dressing 180
cream dressing 180
French dressing 180
mayonnaise 178
mayonnaise, cream 180
mayonnaise, economical 179
mayonnaise without eggs 180
queen fruit sauce 181

Dried fruits 191
Drinking at meals 82
Dumplings, baked apple 207
potato 284
potato stew with 138
potato with 124

Eating between meals 80
Egg gravy 157
sauce 158
Eggnog, cream 234
dry 235
fruit 235
orange 235
Eggplant *sauté* 142
See also Vegetables
Eggs 221
preservation of 255
Emulsified vegetable oil 261
Entire wheat and white flour breads 13, 33, 35
Entire wheat bread 87, 105
Entrées and noon-meal dishes .. 132
beans, see Beans
cereal fillets 150
corn and tomato *soufflé* 153
corn meal fillets 150
corn nut pie 149
corn tamale, baked 152
dressings, baked 133, 134
dumplings with potato stew .. 138
eggplant, baked savory 142
eggplant *sauté*, family style ... 142
frijoles, savory, with rice 146
garbanzos 156
hash, lentil and potato 135
hash, savory nut and potato .. 134
imperial roast 137
Irish stew, vegetarian 140
lentil and potato stew 138
lentil and rice loaf 147
lentil patties, favorite 141
lentils, stewed 154
macaroni and bean pie 143
macaroni *au gratin* 144
macaroni, baked, and olives .. 145
macaroni baked family style .. 143
macaroni creole 144
macaroni egg sauce 144
macaroni with new peas 144
New England dinner 151
noodle and potato stew 138
noodles *au gratin* 145
noodles, creamed 145
noodles, savory, *en* potato border 146

noodles with beans 142
noodles with peas 145
nut and potato pie 135
nut cutlet, fine herbs sauce 154
nut meat with dressing 135
nuttose and potato, scalloped .. 137
nuttose, homemade 134
olive fillets 150
potato and bean pie 142
potato and lentil stew 138
potato and noodle stew 138
potato dumplings 284
potato stew with dumplings ... 138
potpie, savory 139
ragout of vegetables with noodles 140
rice and egg croquettes 155
rice and lentil loaf 147
rice and nut patties 141
rice and soy bean loaf 156
rice and soy bean patties 156
rice, baked, Italienne 147
rice, Spanish 148
rice with peas 148
roasted potato with dressing .. 135
roast nut meat with dressing .. 135
roast, vegetarian pot 136
roast, walnut 136
savory frijoles with rice 146
savory nut loaf 284
savory vegetable loaf 146
scalloped potato with nuttose .. 137
scalloped vegetable oyster Italienne 150
spaghetti and cornlet 149
spaghetti, baked, *en croustade* . 149
spaghetti in tomato 148
Spanish rice 148
stew, bean and macaroni 141
stew, potato and noodle 138
stew, potato with dumplings .. 138
stew, vegetable gluten 139
stew, vegetarian Irish 140
tamale, baked corn 152
tamale mush 152
tamale pie 153
vegetable loaf *en aspic* 151
vegetable loaf, savory 146
vegetarian pot roast 136
walnut roast 136
walnut timbales 152
Essentials to success 96
Ethics of flesh eating 50

Fats 13
in cooking 77
Fat-soluble A 19
Favorite lentil patties 141
Favorite wheat biscuit 119
Fillets, cereal 150
olive 150
Filling for cake 214
apple cream 214
lemon 214
orange 214
strawberry 215
Fine herbs sauce 159
Flaxseed tea 232
Flesh eating a cause of disease .. 48
Flesh food 38, 42, 48, 55, 59
Flour, browned 265
cream roast 265
entire wheat and white 35
the best 99
Food calcium 33, 277
classification, table of 86
combinations 72
composition, table of 90
economics 57
iron 32, 246, 275
minerals essential to all life ... 29
values 55, 59
Food-helps in serving the sick .. 279
Foods, acid-forming and base-forming 271
blood-building 246
their uses in the body 11
French dressing 180
Frijoles, savory, with rice 146
Frosting, boiled 213
orange 213
ornamental 214
Fruit and nut roll 282
Fruit ices 247
apricot 248
grapefruit 248
lemon 247
orange 248
strawberry 248
Fruit pudding, Graham 192
pudding, pressed 197
pudding, steamed 192
Fruits and vegetables 75
canning 250, 256
dried 191

Garbanzos 156
Gastric disorders, diet in 238
Gelatin, vegetable 201
Gluten biscuit 110
gruel 230
stew, vegetable 139

Grano cereal 266
with dates 221
Gravies and sauces 157
Gravy, brown 157
brown cream 157
browned milk 283
country 157
egg 157
Green tomato mince pie 207
Green tomato pie 206
Gruel, corn meal 230
cracker 231
flake 230
flour, browned 231
flour, white 231
gluten 230
granose 230
oatmeal 230
rice 231

Hash, lentil and potato 135
savory potato 134
Hasty eating 38, 79
Heat and energy foods 13
Hints, practical 69
Hoecake, old-fashioned 282
Hollandaise sauce 158
Homemade nuttose 134

Ice cream 247, 249
Icings for cake 213
Imperial roast 137
Individual picnic pie 205
Infectious diseases, diet in 236
Influenza, diet in 236
Internal defenses 31
Intestinal disorders, diet in 241
Invalid recipes 230
Irish stew, vegetarian 140
Iron in food 32, 246

Jelly (agar) 201
berry mold 201
fruit 201
lemon 201
orange 201
Jelly making 259
cranberry 260
currant 260
plum 259
Johnnycake 116
Juice, carrot 285
vegetable 285
Junket 234

Kohl-rabi 172

Lactosa 264
Large variety at one meal 81
Laxative wheat biscuit 281
Lemon albumen 233
sauce 160
snow 194
whey 234
Lemonade 234
with egg 234
Lentil and potato hash 135
and potato stew 138
and rice loaf 147
patties, favorite 141
Lentils, stewed 154

Macaroni and bean pie 143
and bean stew 141
and egg sauce 144
au gratin 144
baked, and olives 145
baked family style 143
creole 144
in tomato 144
with new peas 144
Malted milk 233
Mayonnaise 178
cream 180
economical 179
without egg 180
Measles, diet in 237
Meat, see Flesh Food
Menus for one week 88
Milk and sugar 76
Mince pie, green tomato 207
Mineral matter 12, 29, 55
Minerals essential to all life 29
Mint sauce 160
Miscellaneous recipes 261
Mumps, diet in 237

Natural food of man 37
Nephritis, diet in 246
New England dinner 151
Noodles 264
and potato stew 138
au gratin 145
creamed 145
ragout of vegetables with 140
savory, *en* potato border 146
with beans 142
with peas 145
Nut and fruit bars 266
and potato hash, savory 134
and potato pie 135
and rice patties 141
cutlet, fine herbs sauce 154

loaf, savory 284
meat, roast, with dressing 135
sauce 158
Nuttose and potato scalloped ... 137
homemade 134

Oatmeal cookies 212
gems 114
gruel 230
porridge 219
pudding 195
Objects sought in cooking 61
Okra and tomato 173
Olive fillets 150
sauce 158
Olives, spaghetti with 283
Omelet, bread 223
plain 222
puff 223
Onions, see Vegetables
Orange albumen 234
cream pudding 197
eggnog 235
frosting 213
ice 248
Overeating 82

Parker House rolls 108
Parsley sauce 159
Parsnips, see Vegetables
Pasteurized milk 262
Pastry 202
Patties, bean 155
breakfast 283
favorite lentil 141
rice and nut 141
rice and soy bean 156
Peaches, stewed dried 192
Peach sherbet 249
Pearl barley 220
Peas, chick, see Garbanzos
new 162
with noodles 145
Peppers, stuffed bell 172
Picnic pie, individual 205
Pie crust, beaten oil 202
grano 202
plain pastry 202
Pies, apple 203
banana cream 205
custard 206
green tomato 206
green tomato mince 207
lemon 204
picnic, individual 205
prune 203
pumpkin 204
pumpkin, without eggs 204
raisin 204
strawberry 203
Planning the meal and menu making 85
Pneumonia, diet in 237
Polyneuritis 16
Pop corn balls 266
Pop-overs 114
Potato, see Vegetables
Potpie, savory 139
Practical hints 69
Preservation in salt 255
of eggs 255
Principles of bread making 100
of successful cookery 67
Protein 12, 38, 53
foods high in 243
Prune pie 203
pudding 197
whip 198
Prunes, soaked dried 191
stewed dried 191
Puddings
apple and raisin pudding 199
apple snow 193
blancmange 196
bread custard pudding 195
cottage pudding 198
cream puffs 200
cream rice pudding 195
cream tapioca pudding 193
crumb custard pudding 196
custard, baked 199
custard, baked, soft 200
custard, boiled 199
date whip 198
fruit tapioca 193
Graham fruit pudding 192
lemon snow 194
oatmeal pudding 195
orange cream pudding 197
pressed fruit pudding 197
prune pudding 197
prune whip 198
rice croquettes 198
rice custard pudding 196
sago fruit mold 198
scalloped apples 194
steamed fruit pudding 192
strawberry flummery 196
strawberry whip 194
tapioca, cream 193
tapioca, fruit 193

Pumpkin, canning 254
pie 204
Pure blood and immunity 274

Queen fruit sauce 181

Ragout of vegetables with noodles 140
Rice and banana in cream 220
and egg croquettes 155
and lentil loaf 147
and nut patties 141
and soy bean loaf 156
and soy bean patties 156
baked, Italienne 147
browned 220
creamed 220
croquettes with jelly 198
gruel 231
natural, steamed 219
polished 16, 30
pudding 195
Spanish 148
water 231
with peas 148
Roast, imperial 137
nut meat with dressing 135
potato with dressing 135
vegetarian pot 136
walnut 136
Rolled Oats 219

Sabbath dishes 267
Sago fruit mold 198
Salads, fruit
apple and banana 188
apple and pimento 189
crown prince 189
fruit 187
fruit and nuts 188
fruit basket 187
pear and cottage cheese 285
princess 188
prune and pecan nut 188
raisin 189
ribbon apple 189
stuffed date 189
Waldorf 188
Salads, vegetable
bean and cabbage 184
beet and egg 185
beet and potato 184
beets sliced in lemon 187
cabbage and carrot 183
carrot, *à l'Anglaise* (English) 185
carrot and bell pepper 184
carrot and spinach 285
celery and carrot 183
cold slaw 183
combination 181
cucumber (agar) 186
cucumber *au naturel* 182
cucumbers sliced 183
egg 185
Golden State 183
Italian 184
lettuce and tomato 181
macaroni and olive 185
macaroni (Mr. Holmden's) .. 185
macedoine 185
nut and celery 185
poinsettia tomato 182
potato 184
string bean and pimento 186
stuffed tomato 182
summer 285
sweet potato 187
tomato (agar) 186
tomato *en* surprise 182
tomato *Francais* 182
tomato *Mexicana* 182
water lily 186
Salsify, see Vegetable Oyster
Salts, organic 12, 29, 55
Sandwiches 223
bean 224
carrot and peas 226
celery and olive 226
cottage cheese and pimento ... 225
cucumber 224
date and nut 224
egg 224
egg and tomato 224
honey and nut 224
nut and fruit 224
nut and jelly 223
nut and tomato 223
nut butter and olive 223
olive and bell pepper 226
olive and tomato 226
picnic 224
raisin 224
savory egg 225
spinach and egg 226
stuffed egg 227
Tartar 226
tomato 224
Sauce, Brazil nut 159
cream 158
creole 159
custard 160
egg 158

fine herbs 159
Hollandaise 158
lemon 160
mint 160
nut 158
olive 158
parsley 159
queen fruit 181
tomato 159
tomato cream 159
vanilla 160
Sauerkraut 286
Savory eggplant, baked 142
frijoles with rice 146
noodles *en* potato border 146
nut and potato hash 134
nut loaf 284
potpie 139
vegetable loaf 146
Scalloped potato and nuttose ... 137
vegetable oysters Italienne ... 150
See also Vegetables
Scarlet fever, diet in 237
Scurvy 22
Sherbet, apricot 248
grape 249
peach 249
strawberry 248
Shortcake 109
Soda 24, 25, 111
Soup royale 266
Soups 122
bean, army style 125
cream of barley 128
cream of corn 130
cream of green peas 129
cream of lettuce 129
cream of Lima beans 128
cream of spinach 131
cream of tomato 130
cream of vegetable oyster 129
family potato 128
family vegetable 123
farmers' favorite 125
fruit 131
gold 127
noodle 126
potato with dumplings 124
pottage St. Germain 127
purée of brown beans 126
purée of lentils 126
Scotch vegetable 123
spring vegetable julienne 122
tomato bisque 127
tomato okra 126
vegetable broth 124
vegetable broth, special 232
vegetable chowder 124
vegetable water 232
Soy bean and rice loaf 156
and rice patties 156
Soy beans, stewed 156
Spaghetti and cornlet 149
baked, *en croustade* 149
in tomato 148
with olives 283
Spanish rice 148
Spinach, see Vegetables
Squash, see Vegetables
Starches and acids 73
cooking of 61
Sterilizing, time-table for 253
Stimulants, artificial 82
Strawberry pie 203
whip 194
String beans 162
canning 253
Stuffed eggs 227
Substitute combinations 269
Successful cookery, principles of 67
Succotash, see Vegetables
Sugar 13
and milk 76
substitutes 269
Suppers, late 91

Table of food classification 86
Table of food composition 90
Table of food values 55
Table of measures 97
Tamale, baked corn 152
mush 152
pie 153
Tapioca pudding, cream 193
pudding, fruit 193
Tea and coffee 83
Third meal, the 91
Time-table for sterilizing 253
Toast water 231
Toasts
banana cream 217
cream 216
cream pea 217
cream tomato 218
prune 216
raisin 217
snowflake 217
strawberry 216
walnut cream 218
Tomato cream sauce 159
green, mince pie 207

green, pie 206
sauce 159
Tomatoes, see Vegetables
True food satisfies hunger 38
Tuberculosis, calcium-rich foods in 277
diet in 243, 277
Turnips, see Vegetables
Two-meal plan, the 91
Typhoid fever, diet in 237

Ulcer of the stomach, diet in 240
Unfermented breads 111

Vanilla sauce 160
Variety, large, at one meal 81
Vegetable and flesh foods contrasted 42
broth 124
broth, special 232
butter 261
canning 250
carrot juice 285
chowder 124
gelatin (agar) 201
gluten stew 139
juice 285
loaf *en aspic* 151
loaf, savory 146
oil, emulsified 261
Vegetable Recipes
artichokes 173
asparagus, new 163
asparagus tips and new peas 163
beans, green Lima 171
beans, string 162
beet greens 168
beets, buttered 167
beets, Italian style 167
beets, scalloped 167
beets, stewed 167
bell peppers, sweet, stuffed 172
Brussels sprouts 174
cabbage, boiled 174
cabbage in cream 174
cabbage, scalloped 174
cabbage, stewed 174
carrots and green peas 165
carrots, breaded 166
carrots in cream 165
carrots, stewed, Italian style 165
carrots with egg sauce 165
carrots with tomatoes 165
cauliflower *au gratin* 173
cauliflower in cream 173
celery relish 284
celery, stewed 172
celery with peas 172
chard, Swiss 168
corn and tomato *soufflé* 153
corn, cream, baked 164
corn, ear, baked 165
corn, new, stewed 164
corn on cob 164
corn with bell peppers 164
cucumbers, smothered 175
cucumbers with egg sauce 175
eggplant, baked 170
eggplant, baked, savory 142
eggplant, breaded 171
eggplant *sauté* 142
eggplant, scalloped 170
kohl-rabi 172
Lima beans, green 171
okra and tomato 173
onions, boiled 173
onions in cream 174
onions, stewed 174
oysterplant, scalloped 166
oysterplant, stewed 166
parsnips, baked 168
parsnips, browned 168
parsnips with egg sauce 168
peas, new 162
peppers, sweet bell, stuffed 172
potato and lentil hash 135
potato and noodle stew 138
potato and nut hash, savory 134
potato and nut pie 135
potato cakes 176
potato stew with dumplings 138
potatoes and nuttose, scalloped 137
potatoes *au gratin* 177
potatoes, baked 176
potatoes, creamed 177
potatoes duchess 175
potatoes *en* surprise 175
potatoes, mashed 175
potatoes, roasted 176
potatoes, roasted, with dressing 135
potatoes, savory 176
potatoes, scalloped 176
potatoes, stuffed baked 176
potatoes, sweet, glazed 177
potatoes, sweet, mashed 177
potatoes, sweet, roasted 177
potatoes, warmed mashed 175
spinach 167
spinach, creamed 168
squash, summer, baked 170
squash, summer, scalloped 169
squash, summer, stuffed 169

squash, winter 170
string beans 162
succotash 171
Swiss chard 168
tomato, baked 163
tomato, breaded 163
tomato, scalloped 163
tomato, stewed 163
turnips in cream 171
turnips, mashed 171
turnips, scalloped 172
turnips, stewed 171
vegetable marrow 170
vegetable oysters, Italienne ... 150
vegetable oysters, scalloped ... 166
vegetable oysters, stewed 166
Vegetable water 232
Vegetables 161
raw 15, 19
Vegetarian diet and endurance .. 45
Vegetarian diet and longevity ... 39
Vegetarian Irish stew 140
Vegetarianism 37
Vegetarian pot roast 136
Vital elements in foods 16
Vitamines 16, 26
and calories 26
effect of heat on 21

Walnut roast 136
timbales 152
Warmed-over dishes 267
Water glass (eggs in) 255
Water-soluble B 20
Water-soluble C 22
Wheat 32, 87, 99
flour substitutes 268
steamed 220
Whey, lemon 234
Whooping cough, diet in 237

Yeasts 103
Yogurt 263

Zwieback 111